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- Personal Computers -

DECUS

PERSONAL COMPUTER SIG NEWSLETTER

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FROM THE EDITOR

Two major thoughts were on my mind as I put this newsletter together. First is that there is no definitive place that Rainbow, PRO and DECmate owners can go for information on their machines. Second is that there are sources of information, and a lot of dedicated people who make them available--for free. In this issue of the newsletter, I have tried to pull together lists of all the major sources of information for DEC PC users.

None of the commercial slick magazines even pretend to cater to that market, even though DEC* Professional has 10,000 paid subscribers specifically for their DEC* Professional PLUS Personal version, and over 18,000 (26% of the 70,000) Digital Review subscribers "have" Rainbows (14% have PROs, and 17% have DECmates). I have no figures on HardCopy's circulation, but undoubtedly they think there must be personal computer users because they feature at least one Rainbow related article in each issue, and have recently instituted a Personal Computer Question and Answer column. No one seems to know what the total number of Rainbows sold is, but my guess is in the neighborhood of 200,000. Despite the fact that DEC has pulled out of the "home" computer market, many of these owners are "home" or "small office" users. (I base this conclusion on my experience with our 400+ member Washington Area Rainbow User's Group and on conversations with other user groups and users around the country.)

So where do DEC personal computer users (particularly Rainbow users) go to get information? User groups, newsletters, and bulletin boards. There is a growing informal network which includes user groups and the Rainbow-oriented FIDO bulletin boards. Unfortunately there are still a lot of Rainbow owners who don't have access to a local user group and don't own modems. Even those who have access to either FIDO or a user group, or both, find that these sources do not fill all of their needs. The Atlanta Hotline is helpful, but is now available only for three months after purchase, and gives information only on DEC products.

So there is still a desparate need for a single comprehensive monthly source which covers the DEC PC arena. In its absence, volunteer newsletters will have to do the best they can to provide what none of the magazines will. This newsletter, which is quarterly, won't necessarily have the most up-to-the-minute information (it takes 6 weeks to publish and mail out once it is assembled), but it can have good coverage.

The "good coverage" is up to you. When I want an article for the Washington Area User's Group Newsletter, I can ask a member (in person) to write an article or review. Occasionally people actually volunteer to write things! Because this newsletter serves a much wider constituency--all over the US--I can't be there in person to ask each of you to write a specific article, then put a little gentle pressure on you until you get around to doing it. Nearly everyone has one or more areas of expertise, or one or more programs they really know. As you read this, you'll see the sort of things other users wrote. Please take the time write about something for the newsletter--or call me with information. I'm not fussy about how you submit it to me, as you'll see below.

The idea of participation brings to mind the other thing I have been thinking about--the people who make the "network" work. A newsletter is an obvious and visible product. But there are a lot of other people, both in Local User Groups (LUGs) and Special Interest Groups (SIGs), who invest a lot of time to further communications. Consider:

- Public Domain Librarians, who at personal expense, obtain, sort, maintain, copy, and mail public domain programs for little or no charge to other users

- Sysops, or system operators, who run bulletin boards, such as the FIDO boards mentioned later in the newsletter. Again, at their own expense.

o LUG and Program Chairmen, who have to find and persuade (monthly or quarterly), interesting and relevant speakers for LUG meetings

o The brave souls who not only run a LUG, but also run a bulletin board or write the LUG newsletter (and perhaps administer the LUG's public domain library, too)

Whether at the LUG or the SIG level, please join in to help not only others, but yourself, as well.

For this issue, thanks are due to a lot of people: all of the newsletter editors and sysops, from whom I have borrowed liberally (so much so, in fact, that I almost think this ought to be renamed a "Review") and the Co-Chairman of the Washington Area Rainbow User's Group:

Tom Deahl--Delaware Valley DEC PC User Group News
Rick Eliopoulous--Sysop of FIDO 350 of The San Diego Rainbow Local User's Group
Madelyn Flynn--Perspective
Anthony Garbera--Meriden, CT Digital Business Center Update
Ken Gordon--Co-Chairman, Washington Area Rainbow User's Group
Donald Goss--Mid-Tennessee DECUS PC LUG Newsletter
Bill Horton--Silicon Valley DEC PC User's Group News
Ken Kaplan--Sysop of FIDO's 22 and 51, and Chairman of the St. Louis DEC PC Local User's Group
Dale Miller--San Francisco Bay Area DEC PC User Group News
Annabelle Quick--Interchange, The University of Texas Health Sciences Center Computing Resources Interdepartmental Newsletter
Kurt Reisler--Sysop of FIDOs 74 and 483
Wilber Widmer--NECRUG Notes--Newsletter of the Northeast Connecticut Rainbow User's Group

Thanks also to everyone who wrote articles, either for the PC SIG newsletter, or for their own user group. And finally, last but definitely not least, thanks to the Washington Area Rainbow User's Group techies without whose input I could not edit the DECUS PC SIG Newsletter or the WARUG Newsletter:

Tom Tugman
Dennis Fitzgerald
Jay Bassin
Art McClinton
Steve Stewart
Jack Ference

NOTE: ALL PRICES (PUT IN FOR COMPARATIVE PURPOSES) WERE WHITED OUT AT THE LAST MINUTE AT DECUS' INSISTANCE. I AM AGAINST LEAVING PRICES OUT. LET ME KNOW HOW YOU FEEL ABOUT IT BY RETURNING THE QUESTIONNAIRE.

Caroline Mack
Editor

June, 1985

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HOW TO SUBMIT ARTICLES TO THE PC SIG NEWSLETTER:

Please send me your articles in one of the following formats:

- o WordPerfect on an MS-DOS formatted floppy disk
- o WordStar on an MS-DOS or CP/M formatted floppy disk
- o Samna on an MS-DOS formatted floppy disk
- o ASCII on an MS-DOS formatted floppy disk--remove all formatting commands first, please, or I'll have to strip them out one by one
- o Hard copy (typed or printed out)
- o Via modem using DECMINI (call first)
- o Upload to the WASH-A-RUG FIDO Bulletin Board (703) 359-6179

GUEST EDITORIAL

WILL FIDONET REPLACE THIS NEWSLETTER?
by Tom Deahl

Newsletter editors worry about such things as electronic bulletin board systems. FidoNet is particularly troubling because it looks so good.

FidoNet automatically forwards messages and computer program files across the country to the bulletin boards of your choice--for pennies. Developed by Tom Jennings, FidoNet has been up and running since late 1983.

The way it works is simple. You call up your nearest FidoNet node (see the list at the end of this Newsletter), access the FidoNet message area, then when prompted, you designate the FidoNet system(s) that you want to send your message to. You then enter your message and terminate your call [Editor's note: or use Fido's other extensive capabilities, including downloading or uploading public domain software]. Later that night, the FIDO BBS shuts down according to a pre-arranged schedule and begins processing mail. Processing mail consists of assembling packets, dialing the phone numbers of targeted nodes in the network, and transmitting the data at 1200 baud. At the same time, the local Fido "listens" for incoming mail messages. At the end of the mail exchange period--usually in the wee hours of the morning--FidoNet returns control to the Fido BBS and allows users to log on again.

With this system you can broadcast messages to over 200 other FidoNet systems worldwide. The cost of sending a FidoNet message is controlled by the SYSOP (system operator) and ranges from 10-25 cents a message in the USA--far cheaper than a single phone call to an out of state BBS. With telecommunications costs going up every time we turn around, we users on a budget have no choice but to go the most cost-effective route if we're going to keep in touch with the PC Community. Keeping in touch with other DEC-PC user groups is taking on increasing importance. If we are to unite into effective consumer groups, we could use a system like FidoNet to solicit interest and even commitments from DEC-PC owners/users around the world.

To use FidoNet's long distance message capabilities, you need to establish an account with the local sysop and have a positive cash balance from which he can draw to pay phone connect charges incurred in sending your messages along either to individual users on the network or global messages to everyone at designated target nodes.

(Tom Deahl is the editor of the Delaware Valley DEC PC User Group News, where this editorial first appeared.)

SOFTWARE INFORMATION AND REVIEWS

PRODUCT REVIEW: DECISION AIDE
by N. Jay Bassin

Kepner-Tregoe is a well-known consulting firm in the area of managerial decision making, so I was rather intrigued by their release of a Rainbow program that could guide me through an objective decision analysis patterned after their series of executive and managerial workshops.

First, though, what does this program do, and who might use it? Decision Aide, [Kepner-Tregoe, Inc., 17 Research Road, P.O. Box 704, Princeton, NJ 08542; $; requires MS-DOS, 128k, any printer] unlike any other software you may be familiar with, is neither intended for the horizontal market (word processor programs, for example) nor the vertical (specialized) market. It's really somewhere in-between ("diagonal"?) because it is intended for those users, in any endeavor, who seek (or require) balanced, rational decision making.

If your decisions are pretty black-and-white, like buying a new computer based on lowest price or features for which there can be no trade-offs, Decision Aide is not for you. On the other hand, if you are seeking a choice among a number of alternatives, each within acceptable limits but with different trade-offs, and you want to be able to support your decision objectively (perhaps to your boss?), Decision Aide can be a very useful advisor. Decision Aide does not make your decision for you, of course, but rather leads you (or forces you, depending on your prejudices) through a fairly thorough process that helps ensure that you have considered all the alternatives and have reasons for your decision. It almost takes the place of a small review committee! Specifically, Decision Aide helps you set up your real objectives, it helps you generate legitimate alternatives and evaluate the risks of each, and it finally prints a report summarizing, in "briefing" format, your decision process.

Decision Aide is organized around seven modules: planning your decision; explicitly stating your purpose; establishing objectives; generating alternatives, assessing adverse consequences (risks); and making a balanced choice. A final area allows you to print the report. If this process sounds anything like the format requirement for an Environmental Impact Statement, you're right! Decision Aide's opening menu (which may be suppressed on start-up) depicts these modules as a cycle. You may, however, jump to any module without going through the earlier ones. Obviously, though, you'll need to complete most of them in order to get any realistic results.

Throughout Decision Aide, you may revise and edit your input quite easily. This feature, together with extensive on-line help facilities, make Decision Aide a pretty sophisticated piece of software. A particular word is appropriate about the "Help" facilities. These are context-specific "smart" aides. Unlike most help routines, which just tell you what button to push if you're stuck, Decision Aide really offers on-line tutorial assistance. For example, if you're prompted to respond to a question, "Help" will explain what the question is after, with examples to let you understand the need. That's a real benefit. In fact, there is more substantive information contained in the on-line Help menus than exists in the manual itself! I found myself asking for help at every question just to find out what additional suggestions Decision Aide might offer.

If your need for a decision is clear, and the situation is "routine" you can bypass the Planning section. Otherwise, Decision Aide prompts you to state the current and then the long-term impacts on the situation, people, productivity, clients, organization, revenue, and costs. You are then asked whether you want "Problem Analysis" or not, and whether your particular problem requires single or multiple decisions. Problem Analysis is valuable for situations where something has gone wrong and you don't know why. Once you've figured out the cause, you can effectively make a choice for correcting the situation. If there are multiple,

interconnected decisions (for instance, if you are relocating an office, you will have to choose a city, select a site, acquire staff, etc.), Decision Aide will set up separate decision files for each subdecision, and then help you link them later. Finally, the Planning section prompts you to specify what your decision must be, when, why the urgency, where the necessary data lie, and who makes the decision.

The one necessary starting point in Decision Aide is the second menu area: formulating a concise decision statement (eg, "To select a method to improve market share"). This step defines your scope, and must be simultaneously broad enough to encompass the problem but narrow enough to eliminate unnecessary distractions. Decision Aide serves as a prompter to suggest appropriate phrasing and makes you respond to a series of questions intended to make you conscious of the realism of your decision statement.

In my opinion, the most critical aspect of decision analysis lies in the careful formulation of objectives. Decision Aide takes you through a series of steps to list the objectives; check them for completeness; separating them into "must haves" and "wants"; check the "must have" objectives against certain standard criteria; assign relative weights to the "wants"; and finally to review all the objectives to ensure that they accurately reflect the decision goals. Even for an experienced planner, this step is crucial to the successful outcome of the decision, and Decision Aide rightly spends a fair amount of time in this module. In Decision Aide's tutorial, an example of a "must" is "cost less than $50,000." It's measurable and it's fixed. A "want" objective is also included, "minimize cost," which is desirable but not definable. Decision Aide makes it clear that "musts" and "wants" may be overlapping and artfully chosen. Since "wants" are not all going to happen, it's usually best to weight them according to their importance. You are prompted to select a weighting scale of 1-10 or 1-50 (or no weights at all). The purpose of the weighting is to later assign numerical scores to alternatives, but this is not always necessary. If you do assign weights, Decision Aide automatically sorts the objectives in descending order--another nice touch. The final choice in this Objectives section is to "audit" the objectives, by using Decision Aide to prompt you with questions confirming the applicability of each objective and its phrasing.

[The next section (as well as the rest of Decision Aide) is on the second distribution disk, so you are prompted to change disks before continuing. If you run from a hard disk, you won't have this problem.]

"Generating Alternatives" is the fourth module, and is intended to lead you through the formulation of a broad range of possible decision choices. This is the weakest part of Decision Aide simply because there is no way to generalize what amounts to very case-specific issues. The program just advises you to ask around, see what's been done elsewhere, and to consider doing nothing. This is all good advice, but doesn't eliminate any of the leg work you'll have to do on your own. Even in their own example, K-T doesn't tell you how they arrived at their alternatives. Perhaps they came by mail. Sorry about that.

Decision Aide's section on Evaluating Alternatives is largely common-sense, although the ease of simply following the prompts is deceptive. Decision Aide displays each "must" objective across the top of the screen, with each alternative listed down the left side. You are prompted to enter specific data for each alternative under each "must" objective. Once again, unfortunately, the program glosses over how you get the quantitative data necessary for input. K-T's tutorial just tells you what numbers to put down. In fairness, though, there is no way an algorithm can "know" industry specific data--you'll have to provide your own subject matter expertise and let Decision Aide serve as your management consultant. After you enter the data, you screen each "must" objective to ensure that it passes. For example, if a minimum requirement for an option is to cost less than $50,000 and one alternative budgets out at $60,000, there is no point in further considering it. Of course, you may want to change the data, but let's not cheat too much! Assuming all alternatives pass each "must" objec-

tive, the decision will rest entirely on the "want" objectives. Again, you are prompted to enter descriptive data for each alternative. If you assigned weights to the "wants" in the Objective-Formulation section, you may also assign relative scores (on a scale of 10 to 0) for all of the alternatives against each of the objectives. The weight assigned to each "want" is multiplied by the judgmental score you assigned to each alternative for a numerical total. Kepner-Tregoe claims that these numbers offer "a clear comparison of the relative performance of alternatives against objectives."

I say, "garbage-in, garbage-out." Be very cautious about placing greater faith in numbers based on data that you have pulled out of the air. It's surprisingly easy to forget that such numbers, displayed to two significant decimals on a computer printout, resulted from multiplying two flips of the coin. Decision Aide is surprisingly reticent on this point, even in the Help screens, and I think that's unfortunate. It does, however, suggest that closely ranked alternatives demand the most careful comparison, and that may be a valid use for the numbers. If you've omitted or skipped any data, or if any of the alternatives failed one or more "must" objectives, Decision Aide will let you know. If you want to change any data, you may have to backup to an earlier module.

To assess the "adverse consequences" of each remaining alternative, Decision Aide cycles you through a series of listing risks, making sure they are complete, and then assessing both the probability (high, medium, low) and seriousness (also relative) of each consequence. Identification of risk, like generation of alternatives, is left to the subject-matter specialist: you. Decision Aide again suggests drawing upon your own experience and that of others. However, if you're new to this game, Decision Aide provides its usual good advice in how to proceed. While the assessment of risk is clearly very important in real-life, this section in Decision Aide serves strictly as a notepad for your own assessments. The program makes no analytical use of the information, and does not quantify risk against benefits. The only real use for this section is to provide risk information in the briefing report that will be printed.

The last substantive module is where it all should come together: "Making a Balanced Choice." Here at last, you have analyzed all the alternatives, risks, and objectives, and THE DECISION will leap out at you, right? Decision Aide, like any consultant, will not make your decision for you. You will have to make your choice "based on your analysis of the available information, along with an understanding of your personal approach and the posture of your organization, toward risk." Decision Aide lets you review the alternatives easily, and serves again as a notepad to summarize your conclusions and reasons for selecting a choice. These notes will be incorporated into the printed briefing report.

One of the real benefits of Decision Aide, certainly for users who must report their results to top management, is the professionally formatted briefing paper it generates. The full report consists of at least 10 pages (including a title page), although none of them are crowded. In fact, most look like they're intended as briefing notes or for reduction to overhead transparencies. The full report consists of: Decision Planning (listing the short and long term impacts, the specific decision(s) to be made, and the current decision); List of Objectives ("musts" and "wants" with weights); Summary of Alternatives (indicating any that failed a "must" objective and listing the total scores of those that passed all the "musts"); Adverse Consequences Summary (showing the probability and seriousness of each alternative); Details of Alternatives (listing your data and composite scoring, with each alternative on a separate page); details of the adverse consequences; and finally your reasons for the "best balanced choice." If you omitted any data or sections, Decision Aide will also print a page of "reminders" identifying them. Fortunately, you can choose at the opening printer menu to print only portions of the full report. When you send the results to the printer, Decision Aide simultaneously creates an ASCII text file, so you can edit or change it before final printing. As far as I can tell, you cannot

generate only the disk file: you must get a printed report also. Another drawback is that Decision Aide gives you no choice in naming the disk file: it's always called "REPORT.TXT". If you want to keep it, you must remember to rename it (and you can't from within Decision Aide) before printing another report.

There are two types of users who would significantly benefit from Decision Aide. First are those who are new to decision making or who want to develop their confidence in structured planning. A few sessions with Decision Aide on different problems will serve as a pretty good tutorial at a lot less cost that one of K-T's workshops! If this kind of user is the decision maker, and there is no need to justify a decision to anyone else, there is probably little continuing need for the program once the concepts are learned. The second type of user, probably the one that K-T had in mind when they designed the program, is one who needs to "scope" out a problem and structure the alternatives and risks for someone else--essentially a staff person. This class of user will significantly benefit from frequent and repeated use of Decision Aide even if s/he is very proficient in the process. The reason lies partly in the fine report that's generated, suitable for distribution as a briefing document to senior management; partly for the ease and flexibility in modifying data (likely as a result of comments by others); and partly for the familiarity offered by structured analytical decision making.

There are relatively few bugs in Decision Aide, and the manual is refreshingly good. It's written in compiled BASIC (the run-time module is included), and screen response is therefore very slow. Because screens are neatly formatted with borders and various intensities, the slowness can become somewhat tedious. Kepner-Tregoe would be well advised to rewrite the program in a faster language, such as C or Pascal. There is one serious bug, though, that users should be wary of: when running Decision Aide, do not turn off your printer (or even reset your print buffer, if you have one). If you do, the system will crash and you'll get that old friend, "MAIN BOARD INTERRUPTS OFF." If you plan to use your printer that session, turn it on prior to booting Decision Aide and leave it on throughout. Kepner-Tregoe was not aware of this problem, but promised to look into it. On the positive side, the manual is specifically designed for the Rainbow, and the first half of the book is devoted to the Rainbow keyboard and the function keys. At a time when many third party software vendors are shying away from Rainbow specific implementations, K-T is to be commended for this small but significant touch. The manual claims that Decision Aide's program disk is "copy protected," meaning you cannot install the operating system on the distribution disks and you must boot from another drive. This would prove a real inconvenience to anyone were it true, but I found that there is no copy protection at all. I copied the distribution disks to bootable floppies. Perhaps K-T is following the recent trend by several of the more responsive software houses to stop punishing the innocent. Kudoes to Kepner-Tregoe for that.

Kepner-Tregoe sells Decision Aide with a 30-day, no-questions-money-back-guarantee, an offer that is unique in the software industry. K-T also supports a toll-free help line on Decision Aide, where I was speedily connected not to just anybody, but directly to K-T's Decision Aide manager herself!

Kepner-Tregoe has two other programs in their Pro-Counsel line: Trouble Shooter, a problem analysis package, and a yet-unnamed program to identify and defuse potential problems. For $ . . , you can buy "The New Rational Manager," by C.H. Kepner and B.B. Tregoe to get an overview of the K-T methods embodied into Decision Aide.

Decision Aide is a good product that is easy to learn, easy to use, and well-supported. If you use structured decision making, and especially if you need to develop and justify alternatives for upper management, I recommend Decision Aide.

(c) 1985 by N. Jay Bassin

PRODUCT INFORMATION: WORDPERFECT 4.0
by Caroline M. Mack

Satellite Software International has recently released WordPerfect v. 4.0 for the DEC Rainbow. WordPerfect is a menu-driven word processing program which allows the user to see what the document will look like when it is printed (with the exception of right justification, which does not appear onscreen). Although WP uses control characters to determine the document's format, the user does not have to memorize them. Instead, it utilizes the Rainbow's function keys, including the 20 function keys across the top, the keys above the cursor pad, and the PF keys, to simplify use of the program. The large number of function keys available on the Rainbow minimizes the number of keystrokes necessary to access common functions such as bolding, underlining, centering, saving, exiting. All functions and first-level menus can be called by a single keystroke or by using the shift and a single keystroke.

WordPerfect v. 3.0 was already my favorite word processing program. I originally chose it because of a few features: automatic footnoting, automatic paragraph reformation, the ability to see onscreen what would be printed, and free hotline. At the time I bought it, I knew little about word processors, but had already tried WordStar and found it extremely annoying. WP v. 3.0 had a few faults [see Jay Bassin's article, below], but I really liked it anyway. In WordPerfect, SSI already offered a very sophisticated and complete word processing program, including:

- multiple column formatting
- math functions
- spelling checker
- merge capability
- file encryption
- ability to have two documents open at a time, and to transfer information between them
- special character support
- widow/orphan protection
- superscript, subscript
- proportional spacing (depending upon the printer used in conjunction with it)
- automatic footnoting and renumbering of footnotes
- multiple headers and footers
- macro and macro chaining
- ability to access files from within the program
- ability to make boxes
- 800 hotline number with no service charge--ever

Version 4.0 extends the capabilities of WordPerfect and provides new documentation. The new manual provides a tutorial. It is generic (not IBM PC specific), but provides a strip for the Rainbow). A "Quick Reference" booklet tells where the functions are located. The manual, the strip, and the Quick Reference use a 2-color scheme to help differentiate keys on the Rainbow. There is also a booklet entitled, "Installation." Unlike version 3.0, where the manual and the on-screen help often appeared to be totally unrelated, in 4.0 most of the onscreen menus are printed in the manual.

The changes in the program include the following:

- Enhanced Dictionary: The new dictionary is approximately 100,000 words, more than three times the size of the old. It provides pattern and phonetic look-up, checks for double occurrence of a word, allows addition and deletion of words from the dictionary, and gives the word count. Use of the speller with a hard disk is simple, but with floppies, it involves switching disks and changing the default drive. This procedure is not adequately documented in the new manual. When you press the SPELL key (Dictionary was located on the MODE key in v. 3.0), the menu gives you six choices: Word, Page, Document, Change Dictionary, Look Up, Phonetic. If the word is not found, the new menu gives six

choices: Skip once, Skip, Add Word, Correct, Look Up, Phonetic. There is also a Double Word Menu which allows you to choose between Skip, Edit, and Disable Double Word Checking.

- Paragraph and Outline Numbering: When you press MARK (a new key), a menu offers: Outline, Para #, Redline, Remove, Index, Define, Generate. Outline allows you to make an outline, and Paragraph # allows you to number paragraphs in a document. Using tab stops, it is possible to number up to seven levels. WordPerfect renumbers automatically when entries are added or removed. It does not change the levels of related entries if the level of an entry is changed. Three styles of entry are defined: Paragraph [1.a.i.(1) (a)1)], Outline [I.A.1.a.(1)(a)i)], and Legal [1.1 1.2.1]. You can also make your own style.

- Table of Contents and List Generation: After marking the text you want to include (using BLOCK, the old RANGE key), you press the MARK key, which here gives a menu with two choices, Table of Contents and Lists. After choosing 1, Table of Contents (TOC), you choose the level of the TOC (up to 5). Each time you want to mark a section for the TOC, you must follow the same procedure. Lists are marked similarly. Codes in the block, such as bold or underline, also appear in the TOC. For short documents it may not be worth marking the text, but for any document which is likely to be revised, the time saving (over continually redoing the TOC by hand) will be well worth the extra time to mark the text in the first place. Once the text is marked, go to the place you want the TOC to appear, press MARK again, and use Define to choose the style for the TOC. Then press MARK again, and use Generate. While the TOC is being generated, an onscreen counter allows you to keep track of the progress. When generation is complete, the Table of Contents appears.

- Index Generation: Index generation is very similar to Table of Contents. To mark text, press MARK, then choose Index. If the index entry is longer than one word, you will need to use BLOCK to mark the text to be included. After you have marked the text, you will be given an opportunity to type in a subheading. If you decide to generate both an index and a TOC, be sure to remove the DefMark (using Shift Help [Reveal Code]) needed for generation of Table of Contents before generating the Index, or the second of the two generated will include both.

- Redline/Strikeout: This allows you to mark text to be added or deleted, without actually adding it or deleting it. Before running a final copy, you will need to use delete to actually remove the text.

- Increased Footnote Size: footnotes can now run onto 2 or more pages. Supposedly they can be as long as 300 pages, but I did not test this.

- Endnotes: You can now choose whether you want to have notes appear at the end of the document, within the text at the end of the page, or both. Press the Footnote key, then choose 1 for Footnote, or 5 for Endnote. You can also start the footnote numbering at an artificial spot, and determine the spacing you want within and between footnotes and endnotes, including 1 (single), 1.5 (one and a half), or 2 (double spacing). The manual also gives a macro which allows you to change footnotes to endnotes.

- Automatic Date Insertion: this is a nifty feature. After the cursor is positioned, press the Date key and choose the date format, and the current date appears (assuming that you entered it when you turned the machine on). There are five different date formats.

·Binding Width: allows you to shift the text to the right on odd-numbered pages and to the left on even-numbered pages to allow room for holes on two sided copies.

·Convert Utility: CONVERT.EXE, which must be run when you are outside of WordPerfect, converts files from other media to WordPerfect format, including WordStar, DCA (Revisable-form-text), Seven bit transfer format, Mail Merge, WordPerfect Secondary Merge, and DIF files. I tried it on WordStar documents and it worked beautifully. The only glitch was a document which had very short margins. As soon as I reset the WordPerfect margins it was fine. Once the document is moved, it can be edited. The documents can be converted back when you are finished. The documentation on Convert.exe is found in the Installation manual.

Other Changes: Until you have installed a printer, you will receive a two-screen 'Welcome to WordPerfect' message with basic instructions. For old time WordPerfect users, these screens are unnecessary and may be annoying, but they alleviate the "Omigod, what do I do now?" feeling that the new user gets when turning on WP and being confronted by a virtually empty screen. System Commands, which currently brings up a screen which allows you to choose file management and printer options, has disappeared. Instead, you press LIST FILES, which shows the default drive at the bottom of the screen in the notation,

Dir E:*.* (Use = to change default directory)

If that is the drive you want, you press enter, and the directory for the drive appears. The menu at the bottom of the directory has added a fifth choice, 'text in' which allows you to bring an ASCII file into WP. If you want to know the document size or amount of space left in a document, you must look in the directory. It is not available on a separate screen. The Printer section of the screen is now found under PRINT. It also allows you to install up to six different printers.

RANGE is now called BLOCK (as it was in earlier versions of WP). Blocks are marked in reverse video. Math On, Math Definition, Column On/Off, and Column Definition, formerly found on the MODE key, are now found on the MATH key. The MODE key has disappeared entirely. In its place is the SPELL key (formerly an option under MODE. Widow/Orphan suppression is now on the menu brought up by the PAGE Format key. It was formerly on the SET key. Most of the changes seem to make sense and are not too hard to find.

The Installation manual mentions that the disks are copy protected, but none of the disks I received were. Despite the improved documentation, there are a few glitches. I was unable to follow the directions for installing version 4.0 on a hard disk using paths, and managed to lose the installed version after using it just once. Instead, I installed it using good old COPY *.*, directly. The directions for installing a printer were not as clear as I would have liked. I ended up having to call SSI. I am sorry to report that SSI did not set up any sort of window arrangement, although it continues to allow two documents to be open at the same time.

Version 4.0 is available from SSI for $" . If you already have version 3.0, SSI does not demand a fortune to replace it with Version 4.0. I believe that the enhancements are well worth the minimal cost to replace v. 3.0. To get the new version, send a check for $, and your reference card. They would like proof of purchase but do not require it. Mail everything to: SSI Update Dept., 323 North State Street, Orem, UT 84057. For more information, call (800) 321-5906.

(This article originally appeared in the Washington Area Rainbow User's Group [WARUG] Newsletter.)
(c) 1985 by Caroline M. Mack

WORDPERFECT OR WORDSTAR: A CLEAR CHOICE?
by N. Jay Bassin

At a recent meeting of the Washington Area Rainbow User's Group, there was a lively discussion over the relative merits of alternative word processing programs. As an environmental management consultant and writer, professional word processing is very important to me. I started with WordStar (version 3.30, MicroPro International; $ 4") a year and a half ago, but acquired WordPerfect version 3.0 (Satellite Software International; $) in July of this year and have been using it daily since. In this article I will discuss some of the basic differences between the two programs, and compare and contrast the relative merits of features common to both.

WordStar is a command-oriented program. Its functions (underlining, margins, pagination, etc.) are made by directly typing in embedded commands, usually including a "control character." WordStar displays a "main menu" which identifies the most commonly used commands (cursor movement, exit, save, print, etc.) and single-stroke commands to generate subsidiary help menus. Version 3.30 supports user-definable keys, cursor-motion, and special keys (Find, Select, Insert). The user can suppress the main menu to gain more usable screen space and speed. WordStar can be intimidating to the new or casual user because it has over 130 possible commands, many of which are seldom used. Frequently used commands can be programmed as function keys, and necessary commands are memorized after a month or two.

WordPerfect, on the other hand, is a "menu"-oriented program. Functions and command menus are activated by pressing the function keys at the top of the Rainbow keyboard. To change a margin, the user presses "Set Format," which displays a menu with several formatting choices. The user specifies "Margins" and is offered a chance to change first left and right margins. The user need not memorize the embedded commands, although it takes experience to know which functions are supported by which keys. WordPerfect uses embedded control commands which are invisible to the user unless the "reveal functions" [Shift Help] key is pressed. To delete a control character from either program, the user must delete the embedded command. (In a lengthy document, the most efficient way to locate these buried commands is through the "search" function.) Because WordPerfect is menu driven, the screen is completely blank except for the document itself, and the page and line positions of the cursor.

Screen Display. WordStar's on-screen text display includes embedded printer commands (although they can be suppressed) as well as page-layout (dot) commands. WordStar displays right justified text right on the screen, exactly as the printed document will appear. WordPerfect does not justify on-screen, although the printed copy can be right justified when printed. With WordStar, right and left margins and tab stops are displayed along the top of the screen in a ruler. WordPerfect does not show margin settings, which is a minor inconvenience. However, in WP, text is otherwise the same on screen as it will be on a printed page, including bolding and underlining. WordStar highlights emphasized words by surrounding them with control characters (for example, the display would show: ^Bthis is boldfaced^B, although the printed copies of both programs are identical). Their relative screen refresh rate is significantly different. WordStar, running on CP/M-86, is extremely quick. [I would be very interested if anyone has had experience running WordStar on the Rainbow with MS-DOS]. Scrolling, reformatting, and cursor positioning are performed instantaneously. WordPerfect's screen, however, must be manually refreshed whenever line changes are made, either by pressing the "rewrite" key or scrolling through the altered text. The unrefreshed page display is rather disconcerting and prompts the user to stop typing for the pause that refreshes.

Hyphenation. Automatic word-wrap and hyphenation are extremely important in professional word processing. The major differences between in the capabilities of the two programs should be considered when selecting a primary package. WordStar's hy-

phenation is fairly straightforward. At the end of a line, if the entire word will not fit, it wraps to the next line. There is no automatic hyphenation when entering text, which speeds up text-entry. In WordStar, the text can "reformed" by typing "^B" [Control B] above the section to be changed. WordStar then rewrites from the cursor position to the next hard carriage return, wrapping words from the successive lines to fill gaps left by editing. Added or deleted words and phrases are not reformatted by WordStar until the "^B" key is pressed. This allows rapid and sequential editing of the same paragraph without waiting each time for the program to refresh the page. [Editor's note: that was one of the things about WordStar which drove me crazy! I had to constantly stop to reformat paragraph after paragraph.] When WordStar reaches the end of a line with a word which could be hyphenated, it stops at a suggested place (always between two consonants, or in some other logical place). The typist can accept, alter, or choose not to hyphenate at all. WordPerfect's major drawback as a text editor is its hyphenation routine; it insists on hyphenating any word that falls within the "hotzone," even in the middle of entering text. The user is forced either to hyphenate within the range of the hot-zone (sometimes at an inappropriate break), or not hyphenate at all. WordPerfect does not distinguish between characters or even punctuation marks. If a sentence ends on a line, and the period is directly on the right margin column, WordPerfect's automatic "required space" (following every sentence) together with the period, are interpreted as characters, leading to a suggested hyphenation between the word and the period or, worse yet, between the period and the required space! Once WordPerfect decides to hyphenate, the typist must stop dead and decide where to break the word, possibly interrupting a chain of thought. WordPerfect will not allow you to resume until you hyphenate or cancel the hyphenation. This single-minded approach to hyphenation is exacerbated by WordPerfect's automatic and continuous paragraph reforming. As the user cuts text, the paragraph reforms as (s)he scrolls. If an instance of hyphenation occurs, everything stops until that word is edited. Frequently there are a number of pauses after cutting text, then several more when inserting the new text--I have to hypenate the same paragraph twice! The same thing occurs when changing margins and scrolling down.

WordStar recognizes the "-" key as a required hyphen and will automatically break the word there if necessary. WordPerfect only recognizes the "minus" key on the numeric keypad as a required hyphen, and treats the "-" key on the main keyboard as just another character. Thus WordPerfect frequently attempts to insert a "soft" hyphen in an already-hyphenated word pair.

Cutting and Pasting. WordPerfect offers two modes of moving and reinserting text: by sentence, paragraph or page; or by "range" between two cursor positions. To cut a phrase, the user must: (1) move cursor to beginning of phrase; (2) turn "range" key on; (3) move cursor to end of phrase; (4) press "move" key; (5) select "cut block" option (at this point, the cut block disappears and the screen reformats--see problem above); (6) move cursor to beginning of new location; (7) press "move key"; (8) select "retrieve text" option. To read the newly edited text, the user must scroll through it to refresh the screen and reform the paragraph (while hoping not to hit too many hyphenation stops). Because the program requires so many steps, it wastes time, especially on small blocks of text.

In WordStar, everything is treated as a block. These are the steps: (1) move cursor to beginning of phrase; (2) type ^KB (on the Rainbow, you may instead press the PF1 key to "begin block"; (3) move cursor to end of phrase; (4) type ^KK or PF2 key to mark the "end of block". (At this point the marked block is highlighted in reverse video); (5) move cursor to new position; (6) type ^KV. The block is repositioned, still highlighted in reverse video. Type ^B above the edited text to reform. WordStar's cut-and-paste routine is definitely faster.

Printing and Printed Page Layout. WordStar requires text to be saved in order to print it. WordPerfect allows direct printing from the screen, which is a real convenience. With either the user

can change the default page-layout designs. In WordStar, page design is accomplished through "dot" commands which appear on screen but do not "occupy" a line or appear verbatim on the paper. To override defaults and change the top margin to 3 lines, the bottom margin to 8 lines, the page length to 16 lines, and to turn off automatic page numbering, the following must be typed at the beginning of the page [do not type the bracketed explanations]:

```
.mt 3  [top margin = 3]
.mb 8  [bottom margin = 8]
.pl 16 [page length = 16 lines]
.op    [off page numbers]
```

To accomplish the same thing in WordPerfect, the user must: (1) "Set Page Attributes" key; (2) "Top Margin" option; (3) type "6" half lines; (4) "Page Length" option; (5) type "3"; (6) type "16"; (7) type "Enter"; (8) type "5" (for the number of single-spaced text lines on the page); (9) type "Enter"; (10) type "1" for Page Number Position menu; (11) type "0" for "no pagination"; (12) type "0" or "Enter" to escape from the "Set Page Attributes" Menu. To change other parameters such as justification or printer-pause to allow single sheet paper feed, similar procedures must be followed.

A significant difference between the two in simple page-layout is that WordPerfect does not allow the user to define the bottom margin explicitly. WordPerfect calculates the bottom margin based on top margin and page length, which may result in awkward placement of page numbers within the bottom margin with respect to the bottom line of text, and/or an unusually wide bottom margin. This is due to WordPerfect's placement of the page number (if you choose to put it in the bottom margin) in the bottom text line as defined by the page length function key, with one blank line between it and the last line of text. I called the SSI Hotline to find out how to get a 1-inch top margin, a 1-inch bottom margin, and the page number 1/2 to 1/4 inch above the bottom of the page: SSI said it couldn't be done.
[Editor's note: the author created a macro which achieves this.]

Other Capabilities. Both programs offer a number of other features. Described above are the most commonly used word processing capabilities which should give you an idea of how the two programs behave. In addition, WordPerfect supports some which are not available at all in WordStar: dual automatic page headers and footers (WordStar allows only one); automatic footnotes; dual-text editing through the "Extended Features" key; automatic row-and-column arithmetic; automatic multiple column printing with justification (it can be done manually on WordStar through on-screen column setting and reforming, but it's too complicated to be worthwhile). Both programs support multiple-file merging (form letters, for example), but WordStar's "MailMerge" program is a separate option at $

MicroPro's documentation is slick, clear, and very well-organized. Included in the book is a complete "Training Guide" which is useful to the beginner and intermediate user alike. WordPerfect's documentation is adequate, but generic in the sense that it has not been altered to support specific computers. The documentation was written for the IBM-PC, and has not been purged of machine-specific terms (it took me almost a full day to even find the "search" key, and I dare you to find the "Home" key on the Rainbow [Editor's note: it is the Select key]). The organization of the chapters leaves a lot to be desired. Satellite Software is in the process of revising their documentation.

Conclusions. Is there a clear choice between WordPerfect and WordStar? The answer is yes. However, the choice depends on the user. Both programs offer powerful, full-function editing and formatting. Either will accomplish most of the word processing chores of any business. WordStar accomplishes most of the common functions faster and more directly than WordPerfect, but WordPerfect has more features.

If footnotes or other special features are important to you, WordPerfect is the only choice. WordPerfect is quicker to learn.

Routine proficiency on WordStar could take two months of steady use, as opposed to two weeks for WordPerfect. Casual users forget WordStar commands and are forced to look them up again at each session, nullifying the speed that keyboard commands offer in continuous typing and editing. If your word processing needs fit this profile, WordPerfect is probably better for you. If you type, write or edit professionally (or you are shopping for a professional typist), and do not need the special features of WordPerfect, WordStar offers much greater speed and flexibility, after you have learned the command structure. If you can afford the time to become proficient in WordStar, you may find that working with WordStar is faster.

(Dr. N. Jay Bassin is an environmental management consultant and writer. This article originally appeared in the WARUG Newsletter. Comments in the article are based on WordStar 3.3 and WordPerfect 3.0.) (c) 1984 N. Jay Bassin

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THE STANDALONE FORMATTER--AN ALTERNATIVE TO THE WORD PROCESSOR

by Dennis K. Fitzgerald

Most Rainbow users have been exposed to one or more word processing packages such as WordStar, Select, or WordPerfect. These packages integrate editing, on-screen formatting, and print formatting into one large program. Word processors have many advantages, but often force you to use a large and inappropriate program to edit a simple text or program source file. They also are limited in the types of document formatting they can do and in the ease with which format changes throughout a document may be performed. An alternative approach based on separate editors and formatters can alleviate these problems while providing additional flexibility.

Most formatters are based upon a model established by the IBM Script program and the UNIX ROFF program. These programs process an input file called a "script" and produce a formatted text file, suitable for printing. A separate editor must be used to prepare the script. The script is composed of intermixed commands and text. The commands tell the formatter how to format the text. Typically, formatters include commands to set margins, define spacing, start and stop bolding and underlining, set headers and footers, cause page breaks, and start and stop automatic text filling and justification. More advanced formatters allow you to define new commands, include super- and sub-scripts, and/or include footnotes or other specially placed text.

The advantages of the separate formatter approach include:

·Less disk and memory space needed since word processing and editing functions can be stored on separate disks and are executed at different times.

·Editor and formatting package can be chosen separately to fit your style and budget. Thus, it is possible to get the best possible editor for your money and not be locked into a built-in formatter that doesn't do what you want.

·Formatters can support automatic paragraph numbering and formatting. Many can automatically produce a table of contents for a document.

·Style changes affecting an entire document can be made easily. For example, you can define a macro called ".para" to be used at the beginning of each paragraph. A simple definition for such a macro would include a command to indent 5 spaces.
If you later decided that you would prefer to double space, but not indent between paragraphs, all that would be required would be to redefine the .para macro. It would not be necessary to go through the entire document, looking for the

beginning of each paragraph and manually changing the indentations to double spaces.

·Scripts are usually stored in standard ASCII files. There are no hidden codes, "soft" carriage returns, etc.

·Transfer of files from one system to another is facilitated since it is not necessary to have the same word processing packages on each machine.

Disadvantages of this approach include:

·The necessity to run two programs to do even simple formatting tasks. (Some editors, however, include simple formatting features such as word wrap, paragraph fill and justification, and pagination.)

·The inability to see what the formatted document will look like while you are editing. This can be particularly troublesome at page breaks unless the formatter has automatic prevention of widow and orphan lines.

·With a standalone editor, you may have to give up advanced features such as column-oriented operations, decimal tabs, or special print modes.

·While simple things can be done simply with a formatter, some of the more complicated formatting tasks may require difficult-to-program macro definitions.

Although word processors are the most common tools used for preparation of documents, separate formatters can be very powerful, especially in an environment where preparation of long or complex documents is frequent. The following section describes a "free" editor/formatter combination. Reviews of commercially available editors and formatters are forthcoming.

Free Document Processing

To use the formatter approach to text processing, all that is required is an editor and a formatting program. Each of the Rainbow operating systems comes with a "free" editor. CP/M comes with the RED full-screen editor and MS-DOS comes with the EDLIN line editor. (I personally would not use EDLIN for document preparation, but several inexpensive full screen editors are available. These include the Wordstar-like editor that comes with TurboPascal priced at $. (for both Pascal and the editor), the PTP100 editor at $. and the EDIX editor at $. These are list prices. Discounts are available.)

The Washington Area Rainbow User's Group program library includes a formatting program called NRO that is available in both CP/M and MS-DOS versions (Volumes 28 and 29). NRO is based on the FORMAT program described in Software Tools by Kernighan and Plauger (Addison-Wesley, Reading, MA., 1976). That program is similar to the ROFF programs of UNIX. NRO has 35 commands as follows:

Control of Page Layout

.po Set page offset (number of characters to left of text on output page).
.rm Set right margin.
.m1 Specify header margin size (number of lines above header at top of page).
.m2 Specify number of lines between header and text.
.m3 Specify number of lines between text and footer.
.m4 Specify number of lines below footer at bottom of page.
.pl Set page length.

Fill, Space, and Justification

.fi Start filling text (moving text from one line to another in order to fill each line). On by default.
.nf Stop filling text.
.ju Start right justification of text (eliminate ragged right edges). On by default.
.nj Stop justifying text.
.br Break. (Start new line.) This is functionally equivalent to the "hard" carriage return of Wordstar, i.e., it starts a new "paragraph."
.ls Set line spacing (single-, double-, triple-, etc.).
.sp Insert blank line(s).

Presentation

.bo Boldface next line(s).
.cu Continuous underline next line(s).
.ul Underline alphanumeric characters on next line(s). Contrast with .cu (continuous underline) which causes all characters including blanks to be underlined.
.ce Center next line(s).
.in Indent selected number of spaces.
.ti Set temporary indent (as for paragraph indentation). Can be used with negative value to format "hanging paragraphs" such as this list.

Control Pagination

.bp Break page. (Start new page.)
.ne Specify number of lines needed on current page. (This can be used to eliminate widow lines at bottom of page or to reserve space for a figure.)

Control Headers and Footers

.fo Specify footer (odd and even pages).
.he Specify header (odd and even pages).
.of Specify footer for odd pages.
.oh Specify header for odd pages.
.ef Specify footer for even pages.
.eh Specify header for even pages.

Macro and System Commands

.de Define a macro (new command).
.en End macro definition.
.nr Set number register. (Used within macros to save paragraph numbers, column numbers, etc.)

.bs Enable/disable use of backspace characters to implement underlining and boldfacing.
.cc Change command character (the dot before each command) to new character.
.pc Specify page number character. (Normally, the pound sign character (#), when used in a header or footer, is replaced with the current page number during processing. This command allows you to select a different character.)

.so Take input from selected file. This is one way to implement standard formats. Each document starts with a ".so formfile" command to read in the commands and macro definitions that define the format.

More detailed explanations of these commands are included in the on-line documentation. The authors have not spent as much effort on documentation as would a commercial software vendor. While adequate to describe the program, it does not provide any examples of how to use the program for specific tasks. The documentation is distributed in script form; some examples are available in the script of the documentation. The only example of a macro definition is very simple and not very useful as a blueprint for more complicated macros.

Very sophisticated document formats can be prepared using these simple commands. Macros can be defined to establish standard formats for certain types of documents. It is then possible to make major changes in a standard format by making minor changes to the appropriate macros.

For example, I have put together a set of macros and a short document that uses them. I discovered a few problems while preparing this document, but could overcome most of them.

NRO does not know about the special printer features common on today's printers. It implements underlining and bolding by backspacing or by sending multiple lines with a carriage return but no line feed between them. It does not support multiple fonts, proportional spacing, microjustification, or variable horizontal or vertical pitch. If you wish to use 12 characters per inch horizontally and 8 lines per inch vertically, you must set the page offset, right margin, and page length accordingly and then either edit the appropriate escape sequences in after formatting or set the printer up using a program such as SETPORT.

The source code of NRO is available along with the executables so we can probably expect additional features to become available in the future.

NRO is not the best formatting program available. But for someone on a restricted budget, it provides the most useful features of much more expensive word processors at a price that can't be beat.

Formatting an Actual Document: What You See Onscreen

This is an example which shows how the document looks as it is formatted:

```
.de sl
.br
.in +5
.en
.de le
.sp
.ti -3
o
.en
.de ql
.sp
.in -5
.en
.de se
.nr s +1
.nr t 0
.nr u 0
.nr v 0
.bp 1
.fo //@ns-#//
.ce 2
SECTION @ns
.en
.nr s 0
.de h2
.nr t +1
.nr u 0
.nr v 0
.ne 7
.sp 2
@ns.@nt
.en
.nr t 0
.de h3
.nr u +1
```

```
.nr v 0
.ne 4
.sp
@ns.@nt.@nu
.en
.nr v 0
.de h4
.nr v +1
.ne 4
.sp
@ns.@nt.@nu.@nv
.en
.nr v 0
.de pa
.br
.ne 3
.sp
.en
.po 3
.rm 40
.pl 38
.se
Text Formatting Example
.sp 2
This is an example of the power of text formatting.
Note that the  text  is  automatically  filled  and  justified even
though the  input text  is set up so that each sentence begins on a
new line. .pa
Definition of paragraph format is easy when you use a  macro at the
start of each paragraph.
If I  wanted a  different format, I could just change the macro and
the entire document would reflect the new format!
.h2
Automatic Section Numbering
.sp 2
As you can see, the formatter
automatically numbers sections and paragraphs.
The macro definitions specify the format for each level.
If you want a different format,  you can  change the  macro defini-
tions and get a different format.
.h2
Bulletted lists
.sp 2
Another set of macros allows us to generate bulletted lists.
.sl
.le
This is my first bullet.
It is still filled and justified. .le
A second bullet.
Let's try a second level of bullets. .sl
.le
Second level, item 1.
.le
Second level, item 2.
.gl
.le
More elaborate macros would allow automatic numbering of these bul-
lets and/or specification of an different character instead  of the
"o."
.gl
This is the end of
my demonstration.
```

The Appearance of the Formatted Document: What You See When The Document Is Printed

This is how the paragraph looks when it is printed:

SECTION 1
Text Formatting Example

This is an example of the power of text formatting. Note that the text is automatically filled and justified even though the input text is set up so that each sentence begins on a new line.

Definition of paragraph format is easy when you use a macro at the start of each paragraph. If I wanted a different format, I could just change the macro and the entire document would reflect the new format!

1.1 Automatic Section Numbering

As you can see, the formatter automatically numbers sections and paragraphs. The macro definitions specify the format for each level. If you want a different format, you can change the macro definitions and get a different format.

1.2 Bulletted lists

Another set of macros allows us to generate bulletted lists.

- This is my first bullet.
  It is still filled and justi
  fied.
- A second bullet. Let's
  try a second level of bullets.
  - Second level, item 1.
  - Second level, item 2.
- More elaborate macros would
  allow automatic numbering
  of these bullets and/or speci-
  fication of a different char-
  acter instead of the "o."

This is the end of my demonstration.

(Dennis Fitzgerald is a software engineer with Computer Science Corporation. This article originally appeared in the WARUG Newsletter.)
(c) 1985 by Dennis Fitzgerald

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PRODUCT REVIEW: KNOWLEDGEMAN
by Steven Stewart

KnowledgeMan is a powerful and flexible database management system which, unlike most other popular microcomputer DBMS, places few constraints on the user other than those imposed by the hardware. The maximum number of records per table, characters per field, and characters per record is 65,535. Each record may contain a maximum of 255 fields. The number of tables which may be open at a given time is unlimited, as is the number of index keys for each table.

The system allows users to develop their own customized applications by using a procedural language to create menus, prompts, forms, data error checking routines, and complex data retrieval routines. In addition to performing sequential search and retrieval of records from a table and sorting tables by one or more fields, KnowledgeMan can produce statistical reports (min, max, average, standard deviation, variance, mean, etc.) on any set of fields for any group of records. The user is able to define

unlimited indices for each table, built in the form of B+ trees, to randomly access any record or set of records rapidly. Unlike most database programs, KnowledgeMan also includes a built-in spread sheet. Although not as sophisticated as popular spreadsheets, it allows the user to view and manipulate databases in spreadsheet form without time-consuming transfer of data to other programs. Using color graphics, KnowledgeMan provides pie charts, bar graphs and area curves.

Data entry and retrieval may be done through standard KnowledgeMan commands and prompts or through user-designed forms. Data may be input and output to disk files in a variety of standard formats, including ASCII, DIF, and Basic-compatible files. Data can be protected by assigning passwords to users and by password protecting entire tables or individual fields in various combinations.

Despite its power and flexibility, KnowledgeMan is not for everyone. The command language is complicated and may require a considerable amount of time to master. The documentation is not entirely successful in its goal to teach the system gradually to inexperienced computer users. Experienced users might prefer more extensive examples of ways in which the different commands work together. Sample application procedures included on the distribution disks may help novices learn to create their own applications. KnowledgeMan is well-suited to users with large or complex databases or report requirements. The typical home or small business user may be put off by the lack of user-friendly features.

KnowledgeMan requires 192K RAM; because it resides on three separate disks, a hard disk is recommended to avoid constantly juggling disks. The system can run under either CP/M 86 or MS-DOS. It retails for $ . . An optional screen-painter, K-Paint, costs $; K-Run, a run-time version of KnowledgeMan is available for professional applications developers. KnowledgeMan is produced by Micro Data Base Systems, Inc., P. O. Box 248, Lafayette, Indiana, 47902; (317) 463-2581.

(Steven Stewart is a computer scientist with Computer Science Corporation. This article originally appeared in the WARUG Newsletter.)
(c) 1984 by Steven Stewart

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SATISFIED USER REPORT: R-BASE 4000
By Roland Spressart

Having read all those glowing ads, each touting its product as the ultimate in "information processing," I knew that one of them was THE ONE for me. Being disenchanted with file managers because of their limited flexibility and scope, a Data Base Management System (DBMS) appeared to be the answer. The major deterrent was that most use a complex coded command structure that is a bear to learn. My need is to keep tract of various forensic engineering consulting projects. This calls for a lot of cross-referencing of subjects, events, and methodologies. Enter R-BASE 4000.

Using English-like syntax, the R-Base 4000 commands are uncomplicated. Should you forget, there is a "prompt" mode that can be toggled on or off. Further, on-line HELP is available. Key in "HELP", and the appropriate text appears. Data can be retrieved, manipulated, rearranged, sorted, formatted, queried, etc, rather quickly on my Rainbow 100A with 256K (MS-DOS). The limits appear to be in the amount of capacity on my disks. This DBMS uses a relational (tabular) structure, rather than a hierarchical or tree-like structure. It is easy to define the elements of a database, customize data input and report forms, enter and store data, create passwords for read and or write protection, create rules for the validation of data, and other elements. It will translate its files into ASCII files which can be read into SYLK or DIF files. Files can be exchanged with MultiPlan, VisiCalc, Lotus 1-2-3, dBase II, and word processing programs.

I found it extremely helpful to read through the documentation first. It is first rate. Only a small percentage rubbed off at first. I then ran the disk-based tutorial with the printed tutorial in hand. This brought the major elements into focus. All of this took about eight hours. Rereading the documentation for the second time, I was able to place all the elements into their proper relationships. The pleasant surprise was that the program could be put into full operation with less than 16 hours of learning time. R-BASE 4000 suits me just fine. By the way, I was able to buy R-Base 4000 for $ from a mail order firm. (It is also available from Digital Classified Software.)

(Roland Spressart is chairman of the Delaware Valley DEC PC User Group. This article originally appeared in the Del Val DEC PC User Group Newsletter).

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SOFTWARE REVIEW: MEDIA MASTER
by N. Jay Bassin

Media Master, which translates "foreign" formatted disks to and from the Rainbow operating systems, may be one of the most useful utilities for a Rainbow user's library. You can, for example, take a half-finished report generated on your office IBM-PC with WordStar, polish it at home on your Rainbow, and review it with your client the next day on an Osborne.

The current version for the Rainbow (2.1) supports file translation between 24 different disk formats, including Rainbow CP/M, Rainbow MS-DOS, DEC VT180, and IBM PC-DOS versions 1 and 2. Unfortunately it does not read disks from any of the common stand-alone word processors: their operating systems are too different from PC operating systems.

Included with Media Master is a formatting utility which enables the user to format a blank disc for any of the 24 supported operating systems. Because the Rainbow uses a 96-track drive, it may be difficult to reformat a previously formatted Rainbow disk to a foreign 48-track drive (such as the IBM). The narrower track on the Rainbow may not fully erase data from a previously used 48-track disk. Media Master allows alteration of the pre-write track compensation by trial and error to correct for minor disk alignment differences between hardware. Reformatting is not necessary if foreign disk files are transferred (read) by the Rainbow; however, reformatting is necessary in order to write to files generated on different computers.

When Media Master is booted, the main menu offers eight choices: (1) Copy files; (2) Print directory; (3) Display directory; (4) Log in a new disk; (5) erase files; (6) Verify on write toggle; (7) alter pre-write compensation (described above); and (8) Exit to the CP/M-86/80 operating system. Once booted, the source disk can be removed, leaving both disk drives free for file manipulation. When a non-Rainbow CP/M disk is to be read, the "log-in" selection allows the user to designate the disk drive for the foreign disk. After logging-in, other menu choices can be made.

While Media Master allows the user to read and write data and text files, it cannot successfully transfer machine-specific programs from differing computers. I tried to translate my WordStar CP/M-86 program to MS-DOS for use on the Rainbow, but failed. Media Master will be most useful in translating "vanilla" (not machine-specific) programs, or programs with "install" routines.

The manual is brief, but fairly clear and well-written. The programs are very user-friendly; they will not allow you to make an illegal command. Screen prompts allow decisions to be cancelled at any time.

Media Master and its accompanying formatting program require the CP/M-86/80 operating system with at least 64k memory, although the manual recommends 128k to speed operation. Media Master can be installed on a hard disk. It is available for $ from the authors, MDG and Associates, 4573 Heatherglen Court, Moorpark, Cali-

fornia, 93021. Phone: 805-529-4454

(Editor's note: Mark D. Graybill and Associates (MDG) offers a 20% discount to DECUS members. You will need to give them your DECUS member number. Other formats which the program supports include the TRS-80, Model 4 with CP/M+; TRS 80, Model III with Memory Merchant; NEC PC 8001A; IBM CP/M-86 SSDD; TI Professional CP/M-86; Osborne DD; Kaypro II; Morrow MD-2; Zenith Z90; Heath Z100; Heath with Magnolia CP/M; and Zerox 822 DD. This article originally appeared in the WARUG Newsletter.) (c) 1984 by N. Jay Bassin

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POLY/XFR MS-DOS COMPATIBLE UPGRADE
by Jack Ference

Polygon Software has announced that their programs, poly-XFR, poly-TRM, and pol-COM are now MS-DOS compatible. Polygon has been shipping CP/M and MS-DOS versions together in the same package at no increase in cost for several months. For users who wish to upgrade a CP/M versions, an MS-DOS upgrade is available at nominal cost. For users who purchased any of the three programs and have registered with Polygon by returning the enclosed registration card, the cost of the MS-DOS upgrade is $ plus $ for shipping and handling. To receive an MS-DOS upgrade, return your original Polygon disk with a check for $ along with a note requesting the "Rainbow MS-DOS Upgrade." You will receive your CP/M disk and an MS-DOS disk improved documentation. Mail the above to: Polygon Associates, Inc., 1024 Executive Parkway, St. Louis, MO 63141, (314) 576-7709.

(Jack Ference works for the Naval Surface Weapons Laboratory, and is one of the WARUG public domain librarians. This note originally appeared in the WARUG Newsletter.)

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WPS-80 UPGRADE AVAILABLE

WPS-80 has been been upgraded to Version 1.1. The new version has several changes. It can now run on hard disks with partitions of any size. The "Copy Document to CP/M" now stores the document under the correct name even if an old CP/M document of the same name already exists on the disk. Right justification can now be used when the Print Margin is greater than 0 during printing. All copies of a multiple copy document are aborted. WPS-80 now avoids asking to proceed for pages which are not going to be printed while printing a document with SE YES and using an FR greater than one, and checks more carefully for the end-of-document while printing it, to avoid printing extraneous characters after the real end of the document. The print document function, "GO BACK 'n' PAGES" now counts the correct number of pages. To get the upgrade, WPS-80 users should send a check for $ (to cover shipping and handling) and their original disk to Exceptional Business Solutions, 11738 Moorpark Street, Suite J, Studio City, CA 91604.

Exceptional Business Solutions has also announced a new release of WPS-80 which includes List Processing Mail Merge, DX type communications, and a WPS-8/WPS-80 conversion utility. The new release will be introduced at DEXPO WEST 84. WPS-80 runs on the Rainbow, the VT-180 Robin, and the Pro-350 and DECmate II with CP/M cards. WPS-80 is based on the DECmate's dedicated WPS-8 word processing program. All WPS-80 versions use the same document file structure, so documents can be edited on a variety of different DEC PCs. More information is available from Exceptional Business Solutions, 2210 Wilshire Boulevard #119, Santa Monica, CA 90403, (818) 760-8921.

(This article originally appeared in the WARUG Newsletter.)

PUBLIC DOMAIN DIRECTORY AND FILE MAINTENANCE UTILITIES FOR MS-DOS
by Steven Stewart

This article will examine several public domain alternatives to the MS-DOS commands DIR (directory), REN (rename), DEL (delete), and COPY. All of the public domain utilities that will be discussed in this article are readily available on dial-up bulletin board systems or in local user's group software libraries. They are all generic MS-DOS programs, meaning you can run them on any MS-DOS computer, not just the Rainbow. However, beware that some versions of these programs are not generic and may cause an unusual looking display or may not work at all. Also, many of the programs are continually updated, so the version you find may have more or fewer features than are discussed here. Often the version number of the program is appended to the file name. Most of these programs also come with a short file of documentation, although even without the documentation you can usually figure out their use through experimentation.

The discussion will be divided between programs that display a directory listing and those that provide other file maintenance functions.

Directory Utilities

First let's review the MS-DOS DIR command itself. This command, when issued with no parameters, simply lists all files on the default drive and directory, one per line, along with their size in bytes and the time and date of their last modification. It also displays any subdirectory names, the volume label, the drive and directory name, the number of files listed, and the number of free bytes available on your disk. The command is quite flexible. For example, you may specify a drive other than the default and/or a pathname other than the current one. You may also specify the files to list by using the standard "*" and "?" characters as wildcards. You may use the /W switch for a "wide" display, which keeps a lengthy list of files from scrolling off the screen. With /W, only file names are displayed, five per line, with no other file information. You may also use the /P switch to cause the directory list to pause when a screen is filled. Finally, if you have the MS-DOS SORT.EXE file on your disk, the SORT filter may be used after the DIR command to display a sorted directory. You may even combine the above options to create a command such as:

```
DIR A:\UTILITY\*.COM /P | SORT /+14
```

This example lists complete directory information for all files with a filetype of COM on the A: drive in the \UTILITY directory, sorted by file size (column 14), and pausing at the end of every screen. Needless to say, if you have frequent need of such a command it would be wise to place it in a file with a filetype of BAT so you may execute it with a one-word command.

The MS-DOS DIR command has at least one distinct advantage over the public domain utilities listed below in that it is an "internal" command. That is, you need no special program on you disk in order to invoke the command; it is always available. In contrast, the public domain utilities must be kept on a your default disk in order to be used. Also, they usually take longer to produce the directory listing since the program must be loaded from the disk before it can run and because many of the programs go to the extra effort of sorting the files or perform other processing before producing a display. These reservations aside, the public domain programs listed below often provide significant extra benefits and special features, and depending on your needs you may often find yourself using them in spite of their slight inconvenience.

There are at least seven public domain alternatives to the DIR command. Most of them have command formats that are basically similar to that for the MS-DOS DIR command. The table tells you

what you can specify in the command and what the resulting listing includes. Of course, the versions of these programs that you may find in the public domain may vary somewhat from the features listed in the table. Below is a brief description of the special features of each program.

COVER.COM -- Sends a directory listing sorted by file name to your printer. Prompts you for the disk drive letter and a title for the listing. The printout is surrounded by dashed lines and is intended to be cut out, folded, and inserted into your diskette jacket. Nothing is displayed on the screen. Set your printer for 16% pitch, 8 lines per inch for a printout that will fit neatly in your diskette jacket.

FDIR.COM -- Lists all file names in the current directory by filetype (i.e., the three-letter extension). No other file information is displayed. The unique feature of this utility is the format of the display. You may find it handy for certain purposes.

SDIR.COM -- Displays complete file information on all files in the current directory, sorted by file name (by default), file extension (using the /X switch), file size (/S switch), date and time (/D switch), or unsorted (/N switch). Additionally, you may display all files including hidden ones and subdirectory names (/A switch), and cause the display to pause after the screen is full (/P switch). Since this program has the most options, produces complete information on your files, and has a concise, well organized display, it is the one I most often use instead of the standard MS-DOS DIR command.

TD.COM -- Displays a directory sorted either in reverse chronological order (by default), by file size (using the /S switch) or by file name (using the /A switch). Unlike the DIR command, you must include a file specification if you specify a pathname (e.g., TD \UTIL*.*).

TREEDIR.COM -- Produces a lengthy listing of all files on your disk in all directories. Alternatively, you may start from the current directory, or specify a pathname for a listing of a single directory. Unique because it displays both the actual space used on a hard disk and the space needed to copy the files to a diskette, which is usually less. Total space used is reported for each directory, which includes the totals of any subdirectories.

WHEREIS.COM -- This is not really a directory program, although it performs a function you may sometimes run a directory program for. Given a file name or a file specification using wildcard characters, WHEREIS searches all directories and reports the pathnames of the directories where the files are located.

Z.COM -- A menu driven program that allows you to easily move up and down the tree structure of your directories and display file names in the resulting directory. Options allow you to list all files, all COM files, or all EXE files.

Directory Programs Available for MS-DOS

Program Name	Number of File names per Line	You May Specify: Drive Spec.	Path Name	File name w/ Wildcards	Uses Prompts or Menu	Documentation
COVER.COM	4	yes	no	no	yes	yes
DIR	1	yes	yes	yes	no	MS-DOS
DIR /W	5	yes	yes	yes	no	MS-DOS
FDIR.COM	6	yes	no	yes	no	no
SDIR.COM	2	yes	no	yes	no	yes
TD.COM	1	yes	yes	no	no	yes
TREEDIR.COM	1	no	yes	no	no	yes
WHEREIS.COM	1	no	no	yes	no	yes
Z.COM	1	no	yes	no	yes	no

Program Displays

Program Name	Bytes per File	Subdir. Names	File Date/ Time	Drive Spec.	Dir. Name	Vol. Label	Total Free Space	Total Used Space
COVER.COM	yes	no	no	no	no	no	yes	no
DIR	yes	yes	yes	yes	yes	yes	yes	no
DIR /W	no	yes	no	yes	yes	yes	yes	no
FDIR.COM	no	no	no	no	no	no	no	no
SDIR.COM	yes	yes	yes	yes	yes	yes	yes	yes
TD.COM	yes	yes	yes	no	no	no	no	yes
TREEDIR.COM	yes	yes	yes	no	no	no	no	yes
WHEREIS.COM	no	yes	no	no	no	no	no	no
Z.COM	no	yes	no	no	yes	no	no	no

File Maintenance Utilities

Once again, it may be helpful to review the file utilities provided with MS-DOS before presenting the public domain programs. The MS-DOS delete command (DEL or ERASE) is simple to use. You may issue the command followed by a simple file name to delete a single file in the current directory of the currently logged disk drive. You may also prefix the file name with a drive specification other than the default and/or a pathname other than the current one. You may also include the standard "*" and "?" characters as wildcards in your file specification to delete more than one file with a single command.

The MS-DOS rename (REN) command is just as simple to use. The first file named after the command may optionally include a drive specification or pathname. The second file named after the command will be the new name of the file. For added flexibility, you may rename more than one file with a single command by including the standard "*" and "?" characters as wildcards in both file names to indicate character positions which will not be changed. For example, the command

```
REN  A:*.TXT  *.DOC
```

will rename all files on the A: drive with the .TXT file type to the same name with a file type of .DOC.

The COPY command is an often-used MS-DOS command which copies one or more files, usually from one diskette or subdirectory to another. The first parameter specified after the command is the name of the file to be copied. The second parameter is the destination of the new file. It is most often used in its simplest form, although it is an extremely flexible command, allowing you to optionally copy more than one file by using wildcard characters, rename the new copy of the files, verify that the copies were made correctly by using the /V switch, and join several files together into a single file by inserting "+" between files. For example, the command

```
COPY  A:\DATA\*.DAT  B:\DBASE  /V
```

copies all files with a .DAT filetype in the data subdirectory of the A: drive to the DBASE subdirectory of the B: drive, giving them the same file names and verifying that the copy was done correctly. Another example, showing a more complex use of the COPY command is

```
COPY  *.LST+*.REF  *.PRN
```

which combines each .LST file with its matching .REF file and saves it as a file with the same file name but with a .PRN extension.

There are two other MS-DOS commands which copy files. The DISKCOPY command copies all files, sector for sector, from the diskette in the source drive (the first parameter) to the destination drive (the second parameter). This is a handy way to make an exact duplicate of a diskette. The BACKUP command provides a menu-driven utility for Rainbow owners with a hard disk to

selectively copy their hard disk files to one or more diskettes or restore them to the hard disk later. It is worth noting that, unlike the other commands discussed so far, the DISKCOPY and BACKUP commands are "external" MS-DOS commands. This means that the DEL, REN, and COPY commands are always available as long as the MS-DOS operating system is booted, but the DISKCOPY and BACKUP commands need the DISKCOPY.COM and BACKUP.EXE files to be present before they will work.

The DELETE and VDL programs are are both public domain alternatives to the MS-DOS DEL command. Specify a file name using the "*" and "?" wildcard characters after these commands and the programs will search for every matching file name and prompt you with each file name matching the file specification. After each prompt you may type "Y" or "y" to delete the file, any other key to continue the search without deleting the file, or press the ESC key to end the search and return to MS-DOS. Thus, these commands can save you from the embarrassment of accidentally deleting files that you did not know would match your wildcard specification. The only real difference between these commands is that the DELETE command does not allow you to specify a pathname with your file specification while the VDL command does. Therefore, you would only have use for DELETE if you are using MS-DOS version 1.x, which is not available for the Rainbow.

Two other public domain utilities are WASH and SWEEP (sometimes named CWEEP). Both of these programs are interactive menu-driven programs which are reasonably easy to learn. Simply issue the WASH or SWEEP command from the MS-DOS prompt and you will be presented with a menu of commands and a file name. Type "D" to delete the file (ctrl-D in WASH); type "R" to rename the file; type "C" to copy the file; type "V" to view the contents of the file on the screen. Press the space bar or return key to move on to the next file name in the directory or type "B" to back up to the previously displayed file name. As more and more file names are presented the menu scrolls off the screen, so at any point you may type "?" to list the menu again. At any prompt you may type "X" to exit the program.

Although the programs are quite similar in their style, the SWEEP program provides several functions that WASH does not have. For example, SWEEP allows you to "tag" a set of files with the "T" or "W" commands. You may then output a list of all tagged file names with the "Q" or "O" commands, erase all tagged files with the "E" command, or copy all tagged files with the "M" or "P" commands. SWEEP allows you to get a hexadecimal dump of a file with the H command. Also, several of SWEEP's commands allow you to optionally send output to your printer or a disk file, or if output is being displayed on the screen you may optionally pause every 22 lines. SWEEP, unlike WASH, also has a "Z" command which moves to a new MS-DOS subdirectory. However, MS-DOS version 2.x subdirectory names are not otherwise supported in either program. Clearly, SWEEP is the more powerful program, although the added flexibility also means the program is a bit more complicated to use. It is particularly helpful to review the documentation for these programs before using them.

(c) 1985 by Steven Stewart

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BATCH FILES IN MS-DOS--HOW TO TURN ECHO OFF OFF

by John Harris

Those who are avid users of the BATCH capabilities of MS-DOS are aware of its usefulness. For those who are not, or who are new to MS-DOS, this utility is one of the most powerful and useful features of MS-DOS. It is similar to the SUBMIT command of CP/M 86-80, but is much more powerful. This internal MS-DOS command is the most efficient to control the computer. For example, in my system, I have 16 sub-file directories on drive E to keep my files organized. I can quickly move from one subfile directory to another with the aid of .BAT files by executing the appropriate file.

These files can set the disk, subfile directory, and necessary paths.

The one unsightly feature of .BAT files is that they show you each line of the file as it is executed. You can circumvent this feature (if you do not care for it) by including in your .BAT file the command, ECHO OFF. Then the only thing you will see is the ECHO OFF command.

Since I make extensive use of the .BAT files, I searched for a way to turn off (and leave off) the ECHO OFF command. The information was not in my documentation library. I found a possible solution while reading about the IBM-PC on a mail service. There are patches which can be made inside of PC-DOS COMMAND.COM which will default ECHO OFF. Since the PC and the Rainbow are not compatible, I had to locate the proper places to patch the Rainbow MS-DOS COMMAND.COM to effect the default off for ECHO OFF.

This is how to duplicate it on your Rainbow:

1. Make a copy of your operating system on a blank formatted disk. Once you have done that, erase everything on the new disk except for COMMAND.COM, DEBUG.COM, and the text editor you will use to make the patch.

2. Use the text editor to make a file called ECHOOFF. In this file, type the following exactly as it appears, including the blank lines. Then save the file.

```
A 15C6
CALL 3537

A 3536
DB 24
ES:
MOV BYTE PTR [0877],00
JMP 278C

W
Q
```

3. Now that the file has been saved, you will use the command line "pipe" capability of MS-DOS to "feed" the short file ECHOOFF to the DEBUG program. The ECHOOFF file is actually a series of instructions for the DEBUG program that will make it patch COMMAND.COM right there as you watch. All you have to do is type

```
DEBUG COMMAND.COM <ECHOFF
```

and the patch will be completed in a few seconds.

4. Try it out. Write a short .BAT file or use one of your old ones to see if it has worked. You must reboot your system so that it will install the new version of the COMMAND.COM file. Always make changes such as this on the working copies of your operating system, never on your distribution disk.

(John Harris is the librarian for the Mid-Tennessee DECUS PC LUG. This article originally appeared in the Mid-Tennessee PC LUG Newsletter.)

TECHNICAL ARTICLES

A DISSERTATION ON THE DIFFERENCES BETWEEN 150 AND 200 NANOSECOND DYNAMIC RAM CHIPS

by Rick Eliopoulos

You might be asking yourself whether it is OK to put 150ns or 256K dynamic RAM chips into your Rainbow. It is not only OK, it is preferable! Also, there is no problem with mixing 150ns chips with 200ns chips.

ICs are made from extremely pure silicon, first refined in the form of a large ingot, usually shaped like a large 4" diameter sausage. A thin slice of ultra-pure silicon wafer is first coated with a photographically sensitive coating. The photosensitised wafer is exposed to light through a photo-reduced negative, which creates the pattern of one layer of many transistors, with line widths typically of 2-3 microns. A micron is 1/1000000 of an inch. Next the photographic coating is developed like a negative. Coating is removed to expose the top surface of the pure silicon wafer in only a few small locations. The wafer is then placed into a diffusion furnace where "impurity" atoms of phosphorus or boron are permitted to diffuse into the surface of the silicon to depth calculated precisely with oven temperature and time controls. The process of applying photo-sensitive coatings, exposure to light, and exposure to impurity diffusion gases is repeated six to twelve times. The final step is the application of miniature deposits of aluminum on the top of the wafer, connecting thousands of transistors into an Integrated Circuit (IC).

At this point the wafer is cut into individual IC chips, called dies. A 4" wafer produces about 144 Dynamic RAM chips. The dies are tested to see which ones turn out to be 150ns, 200ns, and 250ns, etc, and which do not work.

One reason for variations of speed across a wafer is the extreme difficulty of optical alignment with the different photographic exposures required. Remember, line width tolerances are only 2 or 3 microns. Quality also varies because of the random nature of the impurity doping diffusions and other impurities. Contaminants in the refined silicon can also cause variations in quality.

Dynamic RAMs of the same brand are "identical twins," designed, fabricated, and processed in the same way. Access time is a measurement of the overall quality of the chip. All the IC's are meant to test out at 150ns or better. So when you buy higher speed memory chips, you are nearly always buying higher quality devices.

The Rainbow uses 200ns chips. [250ns chips are borderline defective IC's.] The Rainbow will not run any faster with 150 ns chips, but you are likely to have fewer overall problems. The computer will not run faster with faster memory because the processor dictates the execution speed. If the processor is designed to wait at least 200ns for something, faster memory won't affect the wait time.

Dynamic RAMs are NMOS devices which will slow down as they get hot. With 150ns devices, there is more room for timing synchronization if the computer gets warm.

You need have no fear of mixing 150ns and 200ns chips since the Rainbow was designed to handle the slower 200ns devices. [Editor's note: While you can "mix" chip speeds, DEC suggests not mixing them within the same banks on the memory board.] Currently the quality ranking of 64K IC chip brands in Japan is:

1. NEC
2. FUJITSU or HITACHI
3. MITSUBISHI
4. TOSHIBA
5. MATSUSHITA or OKI

Originally, it was thought that HITACHI was the number one quality product because it was the brand IBM initially purchased and installed in their PCs. It is the author's understanding that IBM has contracted to buy 256K RAM chips from NEC and HITACHI in such

large quantities that both are modifying their productions lines to produce 256K chips to satisfy their needs. [DEC also uses both brands in the Rainbow.]

[Editor's note: Third party chips are not covered by DEC's warranty and service agreements. If they go bad, you will have to replace them yourself.]

(In additional to his work as a DECUS Symposia Coordinator, Rick Eliopoulos is the system operator of FIDO 350, and chairman of the San Diego Rainbow LUG. This article appeared on the San Diego Rainbow LUG bulletin board.) (c) 1985 by Rick Eliopoulis

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GOING ALL THE WAY: INSTALLING 896K IN YOUR RAINBOW

by Tom Tugman

New software programs call for more and more memory. DESQ, for instance, can require over 512K of memory in order to operate in conjunction with other programs. Lotus will gladly utilize more memory, if it has the opportunity. And more memory allows you to make a larger RAM disk, which allows programs to operate much faster than they can on floppies.

A couple of meetings ago, one of the Washington Area Rainbow User Group's members, Bob Catt, mentioned that it was possible to get 150 nanosecond 256K chips for as little as $ each (it takes 9 separate chips to make 256K), from a company in Beggs, Oklahoma. DEC offers 9 chips (200 nanoseconds) for a bargain price of $ (the same price as the 256K memory board).

We had purchased the 256K board when we originally bought our Rainbow 100+, but couldn't afford to "populate" the board to the maximum allowed: 896K. (Back then the board was $899).

Although I was skeptical--I had never heard of Microprocessors Unlimited [24000 South Peoria Avenue, Beggs, OK 74421, (918) 267-4961], and we have had bad luck with mail order firms before--I finally decided to order 512K worth of chips. By the time we got around to calling, the chips had dropped substantially in price. The day we ordered them, Friday April 12th, Microprocessors Unlimited was actually selling them for $5.10 each! The operator at the company informed us that the price changes frequently, depending on the supply and price in Japan. The two sets, or 18 chips, came to $91.80. They shipped them Federal Express for $6.00, making the total price for 512K only $97.80. Microprocessors Unlimited took a credit card number, but agreed that we could send them a check when we received the chips. We received them the next Monday, April 15th.

Installation was easy. Microprocessors Unlimited sent along a bizarre several page long set of instructions, but this is all you really need to do:

1. The chips arrive in boxes wrapped in aluminum foil. Don't open the foil until your're ready to install the chips.

2. This affair is casual dress only. Be sure to wear cotton clothes (no nylon or other synthetics) and no shoes. The static charge generated by leather on a wool or synthetic rug can destroy the chips (not to mention the memory board!).

3. Put a towel down on the table as a cushion, then spread out a long sheet of aluminum foil.

4. Completely unplug your Rainbow from the wall.

5. Unplug the peripheral interface cords from the back of the Rainbow. Remove the system unit cover.

6. Unscrew the back and remove the circuit boards. You will have to unplug all of the internal ribbon cables for the power source, floppy and hard disk, etc.

7. Remove the Memory Extension board. Lay it down on the aluminum foil, chip side up.

8. Open the box(es) of chips. Touch the aluminum foil with your fingers before removing the first chip and plug it into one of the vacant sockets in the memory board, making sure that the notch is in the same direction as the chips already in the board. Make sure that the tines are correctly aligned by pushing them in a little on each side first, before pressing the chip down. Don't press too hard on the chip or the memory board.

9. After you have installed all of the chips, check the dip switches which are located to the left of the memory banks. If you have installed 256K chips, all of the dip switches should be up. (Switch 4, on the right, is always up.)

10. Put the Rainbow back together. If you have a 100A, you will need to go into SET-UP and manually reset the amount of memory; on the 100+, it will reset automatically. Run Test 1 on the Rainbow diagnostics disk. (If the test fails, open the system unit and check to see if any of the chips are loose.) If it passes, you're finished!

Note: Since this article was first published in the Washington Area Rainbow User's Group Newsletter, I have had a number of calls from Rainbow users who want to know if there is a way to avoid buying a 256K memory board (PC1XX-AD/LZ) from DEC in order to upgrade memory [or, in the case of a Rainbow 100A, buying the 256K memory board and the DEC memory adaptor board (PC1XX-AK/LZ. One alternative is to buy a 128K board from DEC (PC1XX-AC/LZ), which is only . The 128K board, which is physically the same as the 256K board, has 2 banks of 64K chips and one empty bank. You can remove the 64K chips and fill all three banks with 256K chips. Use of the 128K board saves approximately $350, including the cost of a third set of 256K chips. The only third party boards I know of, by Univation, go to a maximum of 448K. If any readers have a better answer, please contact me or the newsletter editor at (301) 927-0108.

(Tom Tugman is a systems analyst with General Electric, and one of the WARUG public domain librarians. He also furnishes technical advice to the editor of the WARUG Newsletter. This article originally appeared in the WARUG Newsletter.)

(c) 1985 by Thomas O. Tugman

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HOW TO RECOVER ACCIDENTALLY DELETED CP/M FILES WITH DU

by Roy Glixon

After I had inadvertantly executed the command "ERA *.BAS" rather than "ERA *.BAK", I realized that it had been more than a month since I had backed-up the games files I was developing. Fortunately, CP/M does not immediately destroy file data when you type the "ERA" command. Instead, it notes in the file directory that the file can be deleted, but doesn't actually delete the file until the space is needed for another file. By using the public domain program "DU", I was able to recover the accidentally deleted files. (Ed. note: DU is available on either Volume 3 or 5 of the User's Group Public Domain Library. See the article, "DEC Donates 100 Disks to Library" for information on how to obtain it.)

These are the steps to follow to recover deleted files:

1. Do not make any commands once you discover the error. (You could overwrite the files and lose them.) Instead, make a copy of the disk, using "DISKCOPY" or "FCV" instead of "PIP". Use the copy, not the original, when you attempt to recover the files.

2. Put the copy of the disk with deleted files in drive B, and a CP/M Utilities disk in drive A. (It is a good idea to plan ahead for this situation by making a utility disk which includes the operating system programs as well as DU, DISKCOPY, FCV, PIP, and FORMAT.)

3. Type "DU" from drive A. (DU, or Disk Utility, allows you to manually edit sectors of the disk. For a Help message, type "?". On all CP/M disks, the directory resides on Sector 0 of track 2; DU however, numbers sectors from "1" instead of "0", so you will have to make DU.)

4. Type the following commands. (Do not type the information in brackets, which is explanatory.)

```
:LB         {log in onto disk B}
:T2         {position to track 2}
:S1         {position to sector 1}
:R          {Read current sector}
:D          {Dump in hexadecimal and ascii}
```

5. Something similar to the following will appear on your screen:

```
00  E5574541  54484552  20424153 0000003C  *eWEATHER BAS...<*
10  02030405  00000000  00000000 00000000  *................*
20  E542494F  52485933  30424153 00000024  *eBIORHY30BAS...$*
30  06070800  00000000  00000000 00000000  *................*
40  E5535441  52574152  53424153 00000079  *eSTARWARSBAS...y*
50  090A0B0C  0D0E0F10  00000000 00000000  *................*
60  00535441  52545245  4B424153 00000035  *eSTARTREKCOM....*
```

6. The "dump" shows several things: there are four files, "WEATHER.BAS", "BIORHY30.BAS", "STARWARS.BAS", and "STARTREK.COM". The notation "E5" is used to mark files which may be deleted. Using the first column as line numbers, you will see that lines 00, 20, and 40 have second columns which begin with "E5". "E5" is a hexadecimal notation marking the file for deletion.

7. To recover the files, the "E5" notation must be changed to a value of 0 for each location in which it appears. To change the value, type the following commands:

```
:CH0,0          {Change Hex location 0 value to 0}
E5              {DU echoes the old value found there}

:CH20,0         {Change Hex location 20 value to 0}
E5

:CH40,0         {Change Hex location 40 value to 0}
E5
```

The locations are now fixed in memory, but they must be "written" to the disk to complete the recovery.

8. Type the command:

```
:W              {Write current sector}
```

9. To retrieve the files on other sectors, type the command:

```
:+1;R           {move to the next sector and read it}
```

Repeat the command, making the changes as above, and writing them to disk, until there are no more sectors.

10. When you have retrieved all of the files, type the command:

```
:X              {return to CP/M}
```

11. Check to see whether the procedure worked by doing a "DIR" (directory) command. The recovered files should appear in the directory.

12. Format a "new" disk, and transfer all files from the recovered disk to it. You can use "PIP" for the transfer. After making and checking the new disk, you can reformat the original disk. Use it to make a copy of your now recovered disk.

That's it. Don't neglect to make those backup copies in the future!

[Editor's Note: We actually tried this, and it works. Try it before you need it. I don't know of a similar utility for MS-DOS.]

(Roy Glixon is a member of the Washington Area Rainbow User's Group. This article previously appeared in the WARUG Newsletter.)

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RAINBOW PRINTER CONNECTIONS
by Frank Steen

I recently successfully connected the Rainbow to four non-DEC printers. My results may be of interest to other Rainbow Users. I work for Choate Rosemary Hall [Wallingford, CT], a private school. We own many Rainbows and many types of printers, so it is important to be able to connect the Rainbow to any type of printer.

The principle I used for my connections was simply to connect pin 6 on the DEC printer port to any pin on the printer itself which needed to be set to high. Since we use our Rainbows as both micros and terminals, I did not use the communications port for printer connections. Below is a list of my printer connections as well as a description of each printer.

1. Epson FX80 with practical peripherals serial card (8K buffer)--This was a straight connection. Pins 1, 2, 3, 7, and 20 on the Rainbow went to pins 1, 2, 3, 7, and 20 on the practical peripherals interface. The Epson performs superbly with the Final-Word [Word Processor] and for text dumped from our VAX 11/750 UNIX system to our Rainbow.

2. Brother HR-35 (serial interface)--Pins 1, 2, 3, 5, 6, 7, and 20 are connected straight through. Pin 6 on the Rainbow is also connected to pin 8 on the Brother. It is best to tie pins 6 and 8 together in the printer cable. The Brother is a fast letter quality printer which emulates the Diablo 630 in every way. The print quality is better than the Diablo, and the HR-35 is just as fast. The Brother HR-35 is available for under

3. Olympia Electronic Compact Typewriter with DX-80 serial interface--This is a straight connection which is identical to the Epson described above. This printer is very slow and does not stand up to heavy office use.

4. Xerox Memorywriter--This is a heavy duty office typewriter which types about 15 cps unidirectional as a printer. Pins 1, 2, 3, 5, 6, 7, and 20 are connected straight through. Pins 4 and 8 are tied to pin 6.

A WARNING: in making the Epson connection, I considered a serial to parallel interface converter like those advertised in Byte magazine. I was warned by dealers and manufacturers that their converters do not work with the Rainbow because the Rainbow uses X-ON/X-OFF protocol. One manufacturer promised a converter for the Rainbow REAL SOON NOW.

(Frank Steen works for Choate Rosemary Hall. This article was originally printed in the Newsletter of NECRUG, the Northeast Connecticut Rainbow User's Group)

MBASIC AND THE FRE( ) FUNCTION
by Cliff Danielson

MBASIC uses free memory for storage and manipulation of string variables. During string processing when new strings are created, the memory space previously used is not immediately recovered. With a lot of string processing, all free memory can be consumed by intermediate strings values. When this occurs, MBASIC resorts to 'garbage collection' to recover string processing memory space. No warning is provided and all input/output to the computer is blocked during the garbage collection process. A period of 1 or 2 minutes for garbage collection is typical. If large strike arrays are employed, it is possible for the process to take more than 20 minutes.

To determine the amount of remaining memory, use FRE(0), e.g., 'PRINT FRE(0)'. To force garbage collection, use a string constant or string variable as the argument of FRE(), e.g., 'X=FRE(A$)'. You would force garbage collection at convenient places in the program and relatively frequently to keep the garbage collection task small, thus avoiding large processing delays. The statement 'MID$(..)=...' can be used to reduce the amount of garbage created as it forces the reuse of memory for string variables.

Note that the above is not correctly explained in the DEC Rainbow 100 MBASIC Reference Manual.

[Editor's Note: MBASIC cannot access more than 128K RAM, no matter how much is available in the machine. After the operating system and the MBASIC program are loaded into the system, only about 52K is left for MBASIC to operate.]

(Cliff Danielson is a public domain librarian for the Boston Computer Society DEC Personal Computer User's Group. This article originally appeared in the BCS DEC PC User's Group Newsletter.)

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DOS-FORMATTING A BLANK DISK
by N. Jay Bassin

Contrary to the instructions in the MS-DOS manual and in the FORMAT command instructions, it is possible to format a fresh disk without first running the CP/M format command. The trick is to use the undocumented "initialization switch" ("/I") with the command. Thus, at the DOS prompt, type:

A:FORMAT B:/I <CR>

If you want to transfer the DOS system files (and COMMAND.COM) to the new disk to make it "bootable", use the "/S" switch with FORMAT in the same manner.

(This article originally appeared in the WARUG Newsletter.)
(c) 1984 by N. Jay Bassin

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RECONFIGURING LOTUS 1-2-3 FOR DOS 2.05
by N. Jay Bassin

For nearly a year, I have been using Lotus 1-2-3 booted from DOS version 1.0 because, in my childlike innocence and belief in The Word from DEC and Lotus, I accepted their assertions over the phone that the distribution disks (System and System Backup) were "too small" to hold the DOS 2.05 operating system. I declined Lotus's offer to send me a "larger" disk for Contrary to their collective wisdom, it is possible (and easy) to install DOS version 2.05 on a Lotus 1-2-3 disk without buying the "larger disk."

You have to: (1) copy the Lotus disk to a formatted blank "scratch" disk; (2) erase the COMMAND.COM file from the scratch

disk; (3) use the DOS "FORMAT b:/s" command to wipe out the entire Lotus disk and transfer the new (2.05) operating system to it; and (4) copy the Lotus files back from the "scratch" disk to the Lotus disk. In essence, you have to recreate the Lotus files on the original master and backup disks in order to make them work properly. Another myth about the Lotus disks is that they are "copy-protected." They're not. They do, however, have an encryption section that is not copyable and that must be present on the system disk on the active drive.

I know it's nerve-wracking to intentionally destroy all the files on a distribution disk, but that's the only way to reinstall the larger operating system. Here we go, step-by-step:

1. Insert the DOS 2.05 system disk in drive A and the Lotus System disk in drive B. Boot DOS 2.05. Remove DOS disk and insert a formatted empty disk in A.

2. Type

```
COPY B:*.* A:
```

This will take a few minutes to copy all the Lotus files to your scratch disk in drive A. When completed, type

```
ERASE A:COMMAND.COM
```

to erase the old command file from the scratch disk. (If you have not yet installed the DOS operating system on the Lotus disks, then you do not have COMMAND.COM to erase.)

3. Replace the DOS 2.05 disk in drive A, leaving the Lotus disk in B. From the A) prompt, type

```
FORMAT B:/S
```

You will get a warning; press any key to continue. Near the end of the exercise, you will be asked for a volume label. I do not recommend giving the Lotus System or Backup disks labels. Finally, you will get a message to the effect that the system files were transferred; the status message will identify about 512 bytes of "bad sector." This is the indication of Lotus's encryption; there is nothing wrong with the disk.

4. Put the scratch disk back into drive A, replacing the DOS disk. Type

```
COPY A:*.* B:
```

and a return to recreate the Lotus files on their original disk.

That's all there is to it. Remember, you must do this for all four "bootable" disks, but only the System and Backup disks are encrypted, so you may create "working" copies of bootable Utility and PrintGraph disks.

(This article originally appeared in the WARUG Newsletter.)
(c) 1985 by N. Jay Bassin

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FILE TRANSFER BETWEEN THE TRS-100 AND THE RAINBOW
by Judy Shockley and Rosemary McKevitt

Here are the steps to transfer files from a TRS-100 to the Rainbow, using poly-TRM on the Rainbow:

On the Rainbow:

```
Load polyTRM; use all default parameters except:
     Communications Menu:
          Parity--none
          Flow Control--change from Host to X-On/X-Off
          Host Attributes--EOF String--^Z
     Press "DO"
     Press "Select"
     Press "R" key
     (filename) B:*.(anyname)
```

On the TRS-100:

```
     Press Text key
     Press Enter key
     (File to edit): filename
     Press P# key
     SAVE TO COM:37N1E
     Press Enter key
```

On the Rainbow:

```
     Press Return key (the file should appear on screen)
     Press Do key
     Press "D" key
     Press Select key
     Press "T" key
     Press EXIT key
```

(Judy Shockley and Rosemary McKevitt are at the Nursing School at the University of Texas Health Science Center at San Antonio. This article was previously published in Interchange, the UTHSC, San Antonio, Computer Support Center Newsletter.)

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A QUICK RAINBOW FILE MANAGER
by Dale Miller

If you have LOTUS, you can use its utilities to manage all of your MS-DOS files. Copy FILEMGR.COM, KB.DRV, and TD.DRV from the "Utility Disk" to another disk. (Put all three on the same disk.) Rename FILEMGR.COM to RFM.COM (for Rainbow File Manager). You can then type RFM, which gives you a very good file management system for the Rainbow. You can COPY, ERASE, RENAME, ARCHIVE, and SORT files on any of your drives. Please note, this is NOT public domain software, and can only be used if you hold a LOTUS license.

(Dale Miller is the chairman of the San Francisco Bay Area DEC PC User Group. This article was originally printed in San Francisco Bay Area DEC PC User Group News.)

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CUSTOM INSTALLATION OF 132-COLUMN SCREEN ON WORDSTAR
by N. Jay Bassin

One feature that WordStar does not provide in its standard Rainbow configuration is a 132-column display. If you attempt to switch to 132 columns in the Rainbow "Setup" mode, the WordStar display shrinks to about half width, but you still have to "scroll" to the right to see text wider than 80 columns.

Take heart, WordStar users! MicroPro International has buried a "hidden" patcher in its WINSTALL.CMD file which enables you to install a wide screen.

First a few words of caution: screen widths over 128 columns have not been fully tested or debugged by MicrPro, and you will get a warning on screen whenever such an implementation is first booted. On the other hand, I've been using it for over a year without detectable problems. Second, if you use the 132 column mode on an 80 column screen, the directory files displayed on the main menu will run off the right side.

If that doesn't bother you, or if you run off a hard disk and don't care what the WordStar directory display says, then you may

decide to use the wide screen patched installation as your standard WS.CMD file. Otherwise, you will have to have two separate command files: "WS.CMD" as the standard 80-column configuration, and "WWS.CMD" (for "wide-WS") as a 132-column configuration.

Here's how to do it, assuming that you are reinstalling an implementation called "WS.CMD" and you want to create a new .CMD file called "WWS.CMD." (If you want to install from the uninstalled WSU.CMD, or if you want to modify a current WS.CMD file without creating a new file, the procedures are very similar.) Make sure that WINSTALL.CMD is on the default drive, together with the WS.CMD file(s) you want to re-install. Be sure to remove the write-protect tab from the disk.

TYPE	WORDSTAR RESPONSE
winstall ws	Copyright messages. Asks for the default drive during installation.
A:	Asks for the name of the file to be installed; offers WSU.CMD as default.
WS.CMD	Asks for the name of the file to which the installation will be saved.
WWS.CMD	Confirms choices, and copies WS.CMD temporarily. Displays the Install Menu.
+ (cr)	Responds with the hidden patcher, called the "Custom Installation Menu," and displays instructions.
:WID (cr)	Displays address in hex: should be 249h, plus some miscellaneous strings. Asks for confirmation.
Y(cr)	Asks for a change, or (cr) to return.
#132(cr) .(cr) X	
X	Exits from Custom Installation Menu.
X	Exits from WINSTALL. Asks for confirmation that you want to save the newly installed .cmd file and returns to CP/M.

That's all there is to it. When you execute the wide-screen WordStar, you may be in either 80 or 132 column mode on the Rainbow.

(This article originally appeared in the WARUG Newsletter.)
(c) 1985 by N. Jay Bassin

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FIDO BULLETIN BOARD COMMANDS

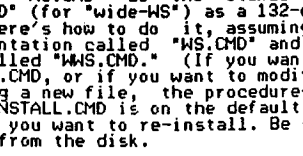
by Tom Tugman

Bulletin boards are easy to use. The FIDO net boards have a simple system (see Fido's Orientation Course, below). To use a bulletin board, you'll need a modem which runs at 300 or 1200 baud. Use Set-Up mode on the Rainbow to change the settings to: FDXA protocol, 8 bit, no parity, one stop bit, local echo off, and your modem speed. Pick a board above, use Modem912, LCTerm, Minitel (DECMini), Kermit, or one of the other communications programs available commercially, and dial up.

After being asked a few introductory questions, you will usually see the screen below (some boards make you wait until they have checked your identity:


```
Fido BBS (c)
FidoNet Node #00

The World's First
   BBS Network
   * FidoNet *
```



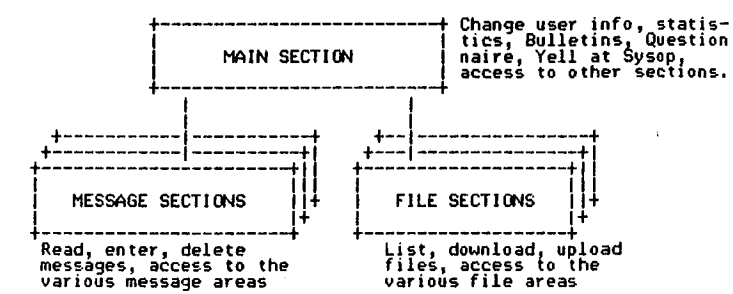

```
        < node name or synonym >
           < node location >
              FidoNode #00

                  Hours
          300/1200 Baud Operation
      8 Bits, No Parity, 1 Stop Bits
        TELEPHONE # < telephone >
-----------------------------------------
```

If you are a first time user of the board, you may be given the FIDO orientation course below:

FIDO'S ORIENTATION COURSE

FIDO is arranged into three (3) functional sections, each with its own command set. These sections are:


MAIN SECTION
Change user info, statistics, Bulletins, Questionnaire, Yell at Sysop, access to other sections.
MESSAGE SECTIONS
Read, enter, delete messages, access to the various message areas
FILE SECTIONS
List, download, upload files, access to the various file areas

The FIDO commands are simple. (When you are on a board for the first time, you may find you are restricted and cannot use all of the commands, however most sysops will give you full priveleges after they have checked you out.):

```
        M A I N   S E C T I O N
+-----------------------------------+
| M ... Enter the MESSAGE SECTION   |
| F ... Enter the FILES SECTION     |
| G ... Goodbye (Logoff)            |
| S ... Statistics (time left, etc) |
| A ... Answer Questionnaire        |
| B ... Read the Bulletin           |
| Y ... Yell at the Sysop           |
| C ... Change Help Level, Name, Nulls |
| U ... List of Users               |
+-----------------------------------+
```

```
   M E S S A G E   S E C T I O N
+-----------------------------------+
| A ... Select a MESSAGE AREA       |
| M ... Return to MAIN SECTION      |
| L ... List of Messages            |
| R ... Read Messages               |
| E ... Enter a New Message         |
| K ... Kill (delete) a Message     |
| I ... Search messages             |
| S ... Statistics: List your Mail  |
| G ... Goodbye (logoff)            |
+-----------------------------------+

      F I L E S   S E C T I O N
+-----------------------------------+
| A ... Change the FILE AREA        |
| M ... Quit to MAIN SECTION        |
| F ... List of Files               |
| L ... Locate a File or Files      |
| T ... Type (display) a File       |
| D ... Download (to you)           |
| U ... Upload a File or Files      |
| S ... Statistics: Disk Space, etc |
| G ... Goodbye (logoff)            |
+-----------------------------------+

+-----------------------------------+
| ? ... Help                        |
+-----------------------------------+
```

The board may have a message such as this:

Commands are single letters and are listed in the command menus at each level. Help is available at almost every level. As a new user, you are restricted to a subset of the available commands. If you would like to have access to the full functionality of FIDO, you should complete the Questionnaire which is available from the main section. In addition, you can leave a private message to the Sysop when you leave the system.

If you use DECMini, communications, including uploading and downloading files, will be especially simple. DECMini (Minitel) was written by Tom Jennings, FIDO's developer. It is one of the simplest ways to download. DECMini is available from the Washington Area Rainbow User's Group Public Domain Library.

(This article originally appeared in the WARUG Newsletter.)

RAINBOW QUESTIONS AND ANSWERS

Send your questions (along with the answer if you have one), to the editor. If there is no answer with the question, she will attempt to get answers. Be sure to explain the problem clearly and include complete information on how you can be contacted, including name, address, home and work telephone.

Q. How can I get my Rainbow to work as a dumb terminal? I tried to connect by modem to a mainframe computer, but the other computer didn't respond. It did respond when I used a modem program.

A. Go into Set-Up mode and check the setting, "line/local." To allow the Rainbow to be used as a terminal to remote site, the setting must be on "line." You will not be able to download files from terminal mode. To transfer files, you will need a modem program such as XModem, LCTerm, Kermit, SmartCom or CrossTalk.

Q. When I print a range from Lotus 1-2-3 I get random sets of about ten extra lines in the printout. This doesn't happen with any of my other programs.

A. 1-2-3 keeps track of how may lines it prints on a page. If you print a range with only 40 lines and then manually move the paper to the top of the next form, 1-2-3 will print 26 more lines and then skip lines for a page break. You should press "A" for "Align" before you press "Go" from the print menu. The Align Command resets 1-2-3's counter to 1 and it knows that it is at the beginning of a new page. (From BCS DEC User's Newsletter).

Q. How can I print my wide spreadsheet from Lotus 1-2-3?

A. Lotus allows you to print as much as 240 characters per line (if your printer can handle it). If you have a dot matrix printer and a wide (13 inch) carriage, you can. Enter Lotus' printer menu:

/PPOML0<RETURN>MR240<RETURN>S\nnn<RETURN>

This sets Lotus' left margin to 0 and the right margin to 240. If you have a matrix printer, check the manual for the decimal code for "compressed" print (variably 15-18 characters per inch). Enter that code in place of the underlined "nnn" above. for example, the decimal code for an Okidata printer is "29." Enter "\029" in the "setup" option on Lotus. If you need multiple codes, express each one in three-digit decimal, preceeded by a backslash. If you store the spreadsheet after this initialization, Lotus will remember it.

Q. How can I convert my Lotus 1-2-3 spreadsheet files to dBase II files?

A. Lotus comes supplied with a utility that does just that! Before you do the translation, though, there are some modifications necessary to the 1-2-3 spreadsheet. First, there may not be more than 32 columns in your spreadsheet (or named range). Consider deleting all empty columns used only for appearance, since dBase doesn't need them. Second, there must be a one-line sequence of labels immediately above the data columns. These become the field names in dBase II. The labels do not have to fit within the column widths: you can have as many as 10 characters in your label, irrespective of the column width. Once you have saved the modified spreadsheet, you can proceed to translation. From the Lotus "Access System" menu (type "LOTUS" from the system prompt), select the "TRANSLATE" option. You will be prompted to insert your Lotus Utility Disk in the default drive. After identifying the source and destination drives and the file to be converted, pick the menu choice for converting "WKS" (Lotus) to "DBF" (dBase). The new file will have the same name as the old one, with a ".DBF" filetype. The ".WKS" file is not affected.

Additional hint: Most versions of dBase II are in CP/M. In order to actually use your translated Lotus files, you must convert the disk file to CP/M. But, why not get a free copy of AME86.EXE from the public domain library and convert dBase II to MS-DOS? After "transporting" dBase II's program files to DOS, and putting AME86.EXE on the same disk, simply type: "AME86 DBASE" at the prompt. Any files saved from dBase will be in DOS.

Q. When Multiplan (a CP/M 86 program) is moved to MS-DOS, with all of its associated files and run through AME-86 (a public domain program which allows you to run most CP/M programs under MS-DOS), the program runs fine, except that it is unable to find any of its own files or any data files created with it. How can I overcome this?

A. Put Multiplan and all the Multiplan files on the same disk and in the same directory. Multiplan does not recognize MS-DOS paths.

Q. How can I get Multiplan to print spreadsheets in 132 column mode on an LA50 or LA100 printer?

A. Select PRINT OPTIONS. Using the TAB key, move to the SET UP position. Type the following:

^[[4w <Return>

This will automatically set the printer to the 16.5 pitch mode. Page 41, Chapter 12 of Rainbow's Read Me First provides more information. (From Perspective, Digital Equipment Corporation's Computer Newsletter.)

Q. When running the dBase II INSTALL program, it crashes repeatedly with an "ILLEGAL PARAMETER" message, and returns to the operating system. What could I be doing wrong?

A. You need to answer the INSTALL questions using UPPER CASE letters.

Q. In dBase II, a legal REPLACE. . .NOUPDATE command keeps returning the DATA ITEM NOT FOUND error message. Why?

A. Despite the instructions in the manual, NOUPDATE must be specified before any FOR clause.

Q: When using MBASIC, where is the name of the program stored in memory?

A: In MBASIC, the name of the program in memory is stored between memory locations 418 to 428. To ask the name of a program (in case you forget), type the following command all on one line:

```
For I=418 to 428:PRINT CHR$(PEEK(I));:NEXT
```

Q. How can a user transfer information from a Lotus 1-2-3 spreadsheet to Samna word processing?

A. While it may not be news that a user can take a "picture" of his or her worksheet from LOTUS 1-2-3 and plug it into a word processing document like Samna Word II, there are some tips and tricks involved, especially if each application uses a different operating system.

If the user has both these applications under an MS-DOS operating system, the procedure is simple. Create a worksheet with 1-2-3 and print it to a file (rather than a printer). This is accomplished with the "/Print File Options". Choose "Other Unformatted" to eliminate headers, footers, and correlated spaces. The right margin should not be greater than the right margin of the document you want to insert it in. The top, bottom, and left margins of the worksheet should be set to 0. This will avoid unnecessary spacing.

Once the file is created, it can be imported into SAMNA by using the "Translate" command, and then edited or enhanced through SAMNA word processing.

But what if SAMNA is being used under a CP/M operating system? Obviously a CP/M system cannot read MS-DOS formats, but the user can convert an MS-DOS data file into a CP/M format using DOSFLX, which makes such transfers easy. Once in CP/M, the user can use the word processor's Translate procedures as outlined above.

What are the advantages of combining a worksheet into a word processing document? You can enhance the worksheet with the on-screen editing capabilities SAMNA has to offer. It saves manual cutting, copying, and xeroxing to obtain a single cohesive document. A special advantage, however, is the ability to take the entire SAMNA document (worksheet and all) and transfer it via the ASCII format and communicate it over the phone lines or via cables to another system. (This question and answer came from Alex R. Garbera of the Meriden, CT Digital Business Center.)

[Editor's Note: this should work with other word processing programs capable of accepting ASCII. The principles are the same, but the commands will be different.]

Q. How many files can I have under MS-DOS?

A. You can create as many subdirectories as their are files available in the root directory, and you can store 256 files in each subdirectory (technically 254, since the directory takes up two files), thus allowing innumerable file storage in the form of directory entries. (Originally published in Perspective, Digital Equipment Corporation's Newsletter.)

Q. Can I back up all files on an MS-DOS partition with one swing of the BACKUP command, even if I have several subdirectories?

A. Yes. Use the /A switch on the BACKUP command, which signifies that all directories, including the root directory, will be searched for files to copy to the backup destination. The command is

:BACKUP E:*)*/A A: <Return>

(Originally published in Perspective, Digital Equipment Corporation's Newsletter.)

Q. Can I use the graphics option with MBASIC?

A. GSX Graphics can be used in assembly language routines and MBASIC can call assembly language routines, but there are no direct calls to GSX functions. (Originally published in Perspective, Digital Equipment Corporation's Newsletter. Questions from Perspective are reprinted with their permission.)

DECMATE II WPS Version 2.0 Fix

by Cheryl Johnson

One feature of WPS Version 2.0 that everyone has found annoying is the problem with editing a wide document. Instead of automatically going into the wider ruler with compressed characters, it stays at 80 columns and you shift between 'regions' by advancing past the 80th character. Most, if not all, of the time, it is more convenient to view all of the text at one time. It is a real bother to have to change something in a menu to do that everytime. So I have designed a user-defined key (UDK) to automate the sequence of strokes necessary to get to the wider ruler.

To define the UDK, from the Main Menu, type DK, press the space bar, type a number between 1 and 9 (which will be the number you use to activate the UDK). Press return, then type in the following key strokes:

Gold M
SW Space Wide
<Return>
<Return>

Press Gold Halt (the Halt key is just above the Tab key) to end definition of the UDK.

To use your UDK, edit the document you want to view in the wide mode. Press Gold and then the number you defined above. The stored sequence of keystrokes will be executed. When you file the document, the screen will automatically return to narrow rule. The UDK will remain stored on your system disk until you redefine the number.

(Cheryl Johnson, of the Grinnell College Office of Computer Services, is the DECUS PC SIG's DECmate Working Group Chairman.)

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DECMATE QUESTIONS AND ANSWERS

Q. In WPS-8, when I try to print a document on the LQP02 printer, sometimes a PRINTER STOPPED message appears on the screen of my DECmate. I use a DECmate I with WPS-8 Version 1.5. What causes the printer to stop?

A. This problem usually occurs when the first document is printed. To avoid getting the PRINTER STOPPED message, when using the DECmate I, turn the system on first. Do not turn on the LQP02 until the Main Menu is on the screen. The DECmate II should be turned on before the printer. With the DECmate II, the Main Menu does not have to be on screen before turning on the printer.

In the future, if you get PRINTER STOPPED, type S and <Return>. A message will appear at the top of the screen that tells why the printer has stopped. If the system and the printer were turned on in the wrong sequence, the message will say, PRINTER STOPPED FOR PRINTER ERROR. To clear the message and continue printing, select the letter "B" to start printing the document from the beginning.

Q. When using WPS-8 Version 1.5, can I remove the bottom ruler that shows at the bottom of the screen?

A. Yes. From the Editor's Menu, type ES (Editor Status). The screen shows the four choices for the status line. To delete the bottom ruler from the screen, choose ES 1, which still shows the status line (in reverse video) at the top of the screen, but which won't show the ruler at the bottom. It should be noted that for extended editing functions, if you remove the status line, the speed of all functions will increase.

Q. What is the difference between the use of the TAB key and the TAB POSITION key?

A. The primary difference is that the TAB key inserts a character during text editing to align text to a tab in the ruler. Use of the TAB POSITION key is a cursor positioning aid for the editing function and has no effect on text that has been entered. In most cases, the auxiliary keypads perform special cursor and editing functions.

Q. I can't remember the Multiplan-80 formulas that I have created in a spreadsheet. How can I access the information?

A. Load the spreadsheet and choose the Print Options command. Select formulas, "yes", rows and columns, "yes", then print the spreadsheet. The spreadsheet will print the formulas in the corresponding cell(s) in which they were previously entered. the figures in the spreadsheet do not print.

Q. While working with the WPS Editor Math, one of my totals appeared on the screen as a figure preceded with a percent (%) symbol. The value has been rounded off. What is wrong?

A. Check the format word to the right of the total formula in the math block. The percent symbol (%) means that the total has more characters in it than were allowed in the results' format word. the result is that the total with decimals in it will be rounded up or down, while the extra decimal characters will be truncated. Extra charaters to the left of the decimal will be printed if there is room to the left; otherwise an error message will occur.

Q. I am attempting to run list processing math and am receiving a syntax error. I've looked at my list and can't find anything wrong. What can I do?

A. Your system will allow a limited number of characters in a numerically designated data field. The most common error is use of the lower case L (l) instead of the number one (1).

Q. While list processing addresses to envelopes, I find that long names are going to the next line all the way over to the left margin. What can I do to prevent this?

A. Remember that the same factors which cause a word wrap in basic word processing are in play when list processing is done into a format that you specify. The right margin in your form document must be extended to the right in order to keep long names from wrapping.

Q. My phone bill reports I was on a long distance call to my computer in Phoenix for 11 hours. I know I wasn't working that long. What happened?

A. As long as the modems are connected, your phone is still off the hook. In all probability, when you disconnected from your system, you neglected to note that the modems were still connected. When returning to the CX menu, disconnecting can be done two ways: "backslash R" (\R) leaves the modems connected to receive or send a document or manipulate the system; "backslash H" (\H) hangs up the modem. Using the \H can save a lot of money in long distance charges.

Note: WPS Version 1.5 uses the F4 key as a <Loc/Cmnd> as an alternative to the back slash. The conservative alternative is to press the DATA/TALK button on the modem to TALK and visually reconfirm that all light except the DTR extinguish.

(The DECmate Questions and Answers were originally published in Perspective, and are reprinted here with permission from Perspective.)

REQUEST FOR PRO-300 SERIES ENHANCEMENTS

by Thomas R. Hintz
Chairman, PRO Working Group

Use of the PRO-300 series microcomputer continues to grow. The PRO finds its way into many diverse areas and has found favor with many users because of its ability to support several languages, and provide both the experienced and inexperienced user with a comfortable environment in which to work. Many existing applications can be easily ported to this machine.

Along with its use, however, comes an increasing number of requests for modification and upgrade. Since all PRO-users have a common interest in the future development of the PRO-300 series of micros, the PC SIG has started a wish list. Since a public list does not exist, I have been collecting wish list requests over the last month. During the New Orleans DECUS Symposium, the list has almost doubled in size. The variety of requests shows a desire for a broad range of future product enhancements. The broad spectrum of interest for the PRO was evidenced by the large number of SIGs which sponsored sessions related to the PRO. A total of eight SIGs gave more than 35 presentations.

The list below is presented in its entirety, but is NOT prioritized. Most of the requests are quite specific. Where the meaning was not clear, the wishes are listed as they were submitted. If you wish to clarify a particular item, please feel free to add to the description. We will continue to add to the list as new items are submitted. Any items that are important to you which are not on the list should be sent to me for inclusion. To continue this process we need to bring some order to this random list of suggestions. You, as a user of the PRO, should have an opportunity to determine their order of importance. Now is your chance. At the end of this newsletter is a form (ballot) to cast your votes. Each item is numbered. Number each wish to show what you consider to be the items of highest priority. Vote for as many items as you like, but number them from highest (1) to lowest priority. After the ballots have been returned, the results will be tallied, reported in the DECUS PC SIG Newsletter, and presented to DEC for their review. Now is your chance to be heard. VOTE TODAY before you forget.

WISH LIST ITEMS

1. RT-11 emulator executing under P/OS
2. BUS extension to provide more expansion slots
3. Streaming tape backup
4. Standalone backup
5. External disk(s)
6. Wild card specification for PFT
7. Warm restart for P/OS
8. Startup detect of battery backup status
9. Instructions for deleting unused application options to conserve disk space
10. Menu item to execute infrequently used applications from disk so that install/deinstall is not required
11. VAX server for cluster of PROs
12. Terminal emulation with full VT24X (e.g. downloadable characters, etc.)
13. DECNET command terminal should be compatible with VMS 4.x (e.g. should allow command line editing)
14. DECNET support for the communications port
15. Ability to spawn a BASIC compilation
16. Batch spooling facility on toolkit for compilation/link
17. Ability to connect two hard disks to to the bus, preferably utilizing the same controller.
18. Ability to dial into the TMS and the communications port from a remote terminal
19. PRO/FMS compatible with VMS/FMS
20. More compatibility between FMS screen control keys (function keys) and the P/OS menu control keys (e.g. P/OS uses the HELP key for help while FMS uses the PF2 key, etc.)
21. Disk formatting capability
22. Access to the DZ driver or the ability to use the other track/sector combinations supported by the RX50 controller
23. Disk compression utility
24. A method of finding out what files to move to recover contiguous disk space so that a complete reload is not required to unfragment the hard disk
25. A search command similar to what exists on VMS for finding text strings in a file or files
26. TPU (Text Processing Utility) for P/OS like the announced but not yet delivered text editor for VMS.
27. A more elaborate PRO/COMMUNICATIONS that makes full use of the TMS and voice box
28. Full window/multi-task support for user developed applications (i.e. SIDEKICK)
29. Enhanced CAD software (not Design Graphics Executive!)
30. DCL sources on Toolkit
31. Reliable PASCAL compiler
32. Complete documentation and listing of the VT102 and GIDIS (TFW) code
33. Graphics from VAX using PRO/COMMUNICATIONS V2.x
34. Maintain color setting when going between menus
35. A better DEC LANDER!
36. Asynchronous dial-up DECNET
37. Full VT125 emulation
38. Full DECGRAPH/DECSLIDE support
39. MENU sources
40. Output CORE graphics to GIDIS files (from PRO/BASIC)
41. PRINT SCREEN to a GIDIS file
42. Image backup of Winchester disk
43. Removable hard disk
44. Virtual terminal support
45. BATCH processing support
46. I D space support for 325 and 350
47. Supervisor mode support for 325 and 350
48. Larger buffer for drawing complex filled figures
49. Warm restart of P/OS
50. SIGHT-rotation of figures and text
51. GIDIS to/from NAPLPS conversion
52. GIDIS to REGIS conversion
53. HELP on floppy, less on hard disk
54. Master index to toolkit documentation
55. Complete documentation set, etc. on laser disk (with cross index)
56. Extending graphics for PRO/BASIC
57. Graphics support over DECNET
58. FPJ-11 floating Point for 380
59. Videotex creation
60. SIGHT-convert multiple objects into single one
61. Coexistance of multiple OS on a single hard disk for each to run in native mode
62. DECNET support under RT-11
63. Do not clear screen after logoff with PRO/COMM TMS

(Tom Hintz is an entomologist with the University of Florida, and long-time chairman of the Pro Working Group.)

GENERAL INFORMATION

DEC-SPECIFIC COMPUTER MAGAZINES AND PUBLICATIONS: WHERE HAS THE RAINBOW GONE?

by Caroline Mack

Over the past several months, the Rainbow has virtually dropped out of sight in most publications. Two magazines which were originally dedicated to the Rainbow and Pro, Digital Review and Personal and Professional, have changed radically. Digital Review has drastically reduced Rainbow coverage, and mixes the small amount of coverage it does have in with coverage of VAXES and the complete range of DEC minicomputers. Personal and Professional has ceased publication, except as a small set in section in The DEC* Professional.

Here is what is currently available:

Magazines:

The DEC Professional Plus Personal: (monthly) primarily covers VAX. The "Plus Personal" section takes the place of Personal and Professional magazine which is now defunct. Typically there are a couple of articles and reviews, a list of Rainbow User's Groups (changes each month), and a list of companies who supply software (they pay for the privilege of being listed). It does have a new product section. Few Rainbow software advertisements. Even though the Plus Personal section is small (24 pages in the next issue), because it appears monthly, there may be nearly as much information as there was in the bi-monthly, anemic Personal and Professional. The "Plus Personal" version of the magazine has about 10,000 subscribers. Subscription: $21/year (12 issues). For more information, contact The DEC* Professional + Plus Personal, P. O. Box 362, Ambler, PA 19002-0362, (215)

Digital Review (monthly) also primarily covers VAX equipment, but it does still carry some Rainbow related articles. The April issue, which is fairly typical, had an article on adventure games which are available for both the Rainbow and the PDP-11. It did mention PCs--IBM PC's, that is. There is a new product section (Rainbow products are mixed in with all the others, so it takes a while to find them) and a section on DEC news. Oddly, the question and answer column (Tech Talk) usually has more Rainbow questions and answers than VAX. Few Rainbow software advertisements. Very slick looking. Subscriptions are free to those who qualify; otherwise they are $29.97/year (12 issues). For more information, contact Digital Review, Fourth floor, One Park Avenue, New York, NY 10016, (212) 503-5110.

HardCopy (monthly) also concentrates on Digital's larger systems, but it appears to be increasing coverage of the Rainbow. It has recently added a PC question and answer column. There is an ongoing list of user's groups. The February issue, which seems fairly typical, had an article on Rainbow tax programs. Subscriptions are /year (12 issues). For more information, contact Hardcopy, Seldin Publishing Co., P. O. Box 759, Brea, CA 92621.

Newsletters:

Perspective is DEC's quarterly newsletter. The glossy 48 page publication is particularly notable for its extensive Question and Answer section on DCS software. Source of DEC Product Line Information. Free. For more information, contact Perspective, Digital Equipment Corporation, 40 Old Bolton Road, Stow, MA 01775.

DECUS PC SIG Newsletter (this newsletter) is the quarterly newsletter put out by the DECUS PC SIG. It is currently printed with the DECUS Office Automation and Graphics SIG Newsletters. Starting September 1, all DECUS SIG Newsletters will be folded into one large monthly publication (estimated cost is $35/year. For more information, call Carol Dunbar at DECUS, (617) 480-3418.

Several Local User Groups put out newsletters. Here are some:

The Washington Area Rainbow User's Group Newsletter (monthly, except August), 12-18 pages, features articles, question and answer, and software reviews. It is monthly except August. Currently free.

The Boston Computer Society DEC Personal Computer User's Group Newsletter has recently resumed publication. Edited by Anu Pareek, 3 pages. Notes from the group's chairman, meeting notes, reviews, and advertisements.

The Delaware Valley DEC Personal Computer User Group News (five times a year), 12-14 pages, edited by Tom Deahl, features articles, editorials, and software reports.

The Hartford (CT) Rainbow User's Group Newsletter (quarterly), 4-12 pages, edited by Jean Whitney. Features meeting notes, articles.

The Middle-Tennessee DEC PC LUG Newsletter (monthly), 3-4 pages, edited by Donald Goss. Features notes from the editor, meeting notes, articles.

The Northeastern Connecticut User's Group Newsletter (monthly), 6-18 pages, edited by Wilbur J. Widmer. Articles, how-tos.

San Francisco Bay Area DEC PC User Group News (monthly?), 4 pages, edited by Dale Miller.

Santa Barbara, Ventura, San Luis Obispo County Area DEC-PC Local User's Group Newsletter (quarterly), 2 pages, edited by Rick Vincent. New.

Silicon Valley Digital PC User's Group Newsletter (monthly), edited by Bill Horton. Meeting notes, occasional articles.

For ardent and wealthy DEC-watchers, Adolf (Sonny) Monosson puts out two informational DEC related publications in addition to the quarterly Monosson's DEC* -Compatible Buyer's Guide:

Monosson on DEC*, (monthly) a newsletter which covers DEC related topics in depth. The DEC PC's are infrequent topics. The newsletter is available for a steep /year from Monosson on DEC*, P. O. Box 71, Kenmore Station, Boston, MA 02215, (617) 267-2900.

The newest Monosson publication is Monosson's DEC* Market Weekly (50 issues a year) which covers current DEC topics. The issue I saw had very timely information which was not published elsewhere. The subscription fee is /year. For more information, contact Monosson's DEC* Market Weekly at the address above.

Other sources:

Computers-R-Digital is another DEC related publication, which appears to be half-way between a newsletter and a magazine. Monthly. It consists of articles on DEC. Since I haven't seen a recent issue, I don't know what the percentage of Rainbow related articles and advertising is. Subscriptions are free to those who qualify, otherwise are /year (12 issues?) For information, contact Directory Database, Box J, Navesink, NJ 07752, (201) 291-1208.

If you just want to look up articles on a specific topic, try the Microcomputer Index, put out by Microcomputer Index Company, P. O. Box 50545, Palo Alto, CA 94303, (415) 948-8304. The Index is available both in hardcopy and on-line through Dialog (File #233). The magazine version costs $ /year for a subscription (it comes out 6 times/year). It indexes articles from about 75 sources, 40 of which are popular computer magazines, and abstracts some articles. The Index has recently been taken over by a new company, and is still trying to catch up. The on-line Dialog ver-

sion has articles through October, 1984 indexed, but should soon have November-December. Once 1985 is up to date, the on-line version will be updated monthly.

(This article originally appeared in the WARUG Newsletter.)
(c) 1985 by Caroline M. Mack

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NEW TAX LAW BITES INTO HOME COMPUTER MARKET
by Caroline Mack

The Tax Reform Act of 1984, signed by President Reagan and enacted on July 18, 1984, made significant changes relating to home computers and other business deductions. The new laws are structured so that the owner of a home computer may find it very difficult to write off part or all of the cost of the computer and peripherals.

For computers acquired (bought or leased) after June 18, 1984, the following rules apply:

In order to take advantage of investment tax credits, first year expensing, and accelerated depreciation (ACRS) on a computer, the percentage of business use must be more than 50% on an annual basis for both of the first two years. Production of income other than that of a business or trade cannot be used to determine the percentage (eg., keeping track of investments or rental property). Use by another person should not be included in the computation for the 50% test unless the use is connected to the taxpayer's trade or business, the use provides income to the other person (unless the user is a relative or 5% owner), or a fair rent is paid to the other taxpayer.

If the computer is used for business purposes less than 50% of the time, no investment credit or depreciation acceleration under ACRS can be claimed. However, the business percentage and the investment income use percentage should be added together to determine the percentage on which a straight line deduction should be figured. (For instance, if the computer is used 30% for business and 25% for keeping track of rental properties, the business use is less than 50%, but the usage for determining the depreciation deduction is 55%.) The deduction must be made using the straight line method over a period of twelve years. As under the old law, a deduction can be claimed only for the proportion of usage which is related to business or income production.

If the computer is owned in connection with the individual's employment, investment credit and ACRS deductions may be made only if the computer is required for the convenience of the employer and is a condition of employment. For this condition to be met, the computer must be required for the employee to properly perform duties of his/her employment. A statement by the employer that the property is required as a condition of employment is insufficient to satisfy the law.

Computers which are exclusively located at a regular business establishment, including a qualified home office, which are owned by the employer or proprietor, are generally not affected by the 50% test.

If the computer is used for business purposes more than 50% of the time, investment credit, first year expensing, and accelerated depreciation may be used. The percentage of use for investment income may be added to the percentage of use for business income to determine investment credit and ACRS (accelerated deduction). Should the business use percentage fall below 50% during the first two years, the tax savings involved must be repaid.

The maximum dollar amount of equipment expense (of any kind) which can be "expensed" or deducted in a single year has been reduced to $5000/year through 1987. Previously, the amount for 1984 was to be $7500; for 1985, $10000. [Expensing allows the taxpayer to deduct a lump sum amount for the first year in lieu of spreading that portion of the deductions for depreciation over a number of years.]

Where the computer is considered "mixed use"--that is, is used for both personal and business applications, the law requires that investment tax credits and deductions claimed for business use must be substantiated by "adequate contemporaneous records." [Note: this requirement applies also to automobile, travel, and entertainment expenses.) Professional tax return preparers will be required to advise taxpayers of the recordkeeping requirements and obtain written confirmation that the records exist before they sign the tax return. The taxpayer may be required to indicate directly on the return that the required records have been kept. Claiming a deduction without the required records could potentially be considered fraud. The requirement takes effect in the 1985 tax year.

Whether or not you are able to deduct a home computer, you can deduct the cost of software used for business, tax preparation, and investment applications. The law also provides that a hobby can qualify as a business if you are making a good faith effort to market the product of the hobby. If, for instance, you write software and make a good faith effort to sell it, you may be able to take deductions for equipment depreciation, travel, and office expenses just as any business does. You must keep careful records of your expenses, and may decide to run advertisements, send the software to publishers, have business cards and keep a separate business only checking account. Even if your efforts fail, you can deduct business losses against personal income for three years out of five. If you make a profit for at least two years out of five, you can continue to write off expenses related to your business/hobby.

You should also be able to deduct expenses for journals and magazines related to computing if they are necessary for your job. Computer related courses (even if they lead to a degree) may be deductible if they are meant to further you in your current job, but not if you are taking them to switch to a new field. If your company pays for courses, you should get a letter from your boss or a benefits counselor stating that the course is directly related to your job; otherwise, you may have to pay taxes on the tuition aid [this is retroactive to January of 1984]. You can also deduct sales tax paid on a home computer and peripherals if you itemize deductions on your tax return. You can deduct the costs of looking for a new job if you itemize; conceivably this could include a proportion of computer expenses if you use the computer to prepare resumes and letters.

This information is meant to be informative and is not exhaustive. For more detailed information, see an accountant or other tax professional. Taking a deduction for a home computer may be a flag (as is a home office deduction) which will make an IRS audit more likely.

[Editor's Note: as this was going to press, there were rumors that the requirement to keep a log of computer usage has been abolished. Check the next issue for more information.]

(This article originally appeared in the WARUG Newsletter.)
(c) 1984 by Caroline M. Mack

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POINTS OF ETIQUETTE
Ms. Motherboard

Dear Ms. Motherboard:

Is it acceptable to send personal letters written on the computer and printed on a dot-matrix printer? I have nearly forgotten how to hold a pen.

--Imperfect Writer

Dear Writer:

Just as typing a personal letter is acceptable (particularly if one's handwriting is somewhat less decipherable than runes), it is acceptable to "type" one's letters on a printer. It is especially important that the missive not appear to have been produced in quantity, with only the names of the recipients changed. When using a dot-matrix printer, one should use a dense type style if possible. Margins on letters should not be right justified. Red ink is still not acceptable. Ms. Motherboard reminds you, however, that certain letters, such as love letters, thank you notes, and sympathy letters, which are very personal, and should, of course, still be written by hand.

Dear Ms. Motherboard,

I really enjoyed your first column on Points of Etiquette and hope you will continue it. Your reader's problem really hit home for me. I was engaged to be married this year, and I could hardly get my fiance interested in the wedding plans until he came up with the idea of doing our own wedding announcements on his new Rainbow. Well, I was sort of aghast, but when he showed me his letter quality printer I felt a little bit better. The announcements looked super, and we managed to get married in spite of the all-consuming computer!

My question for you, though, has to do with another matter. Now that we're married, I find it is very difficult to get any time on the machine because my husband is always on it. He keeps telling me I should learn to use it, but when? How do you and yours manage time on the computer in your house? Sometimes when I have to do word processing for my job, I think I should have priority. This is worse than scheduling the bathroom in the morning! Can you help?

--Multiplanned and Mismanaged

Dear Multi Ms.,

Ms. Motherboard sympathizes with your predicament. She herself has a difficult time getting the computer for the terribly important task of advising on computer etiquette. For instance, in order to answer this letter, Ms. Motherboard had to wrest the keyboard away from her husband in a most embarrassingly unladylike manner. She had thought that the solution might lie in getting a second computer, but the temporary presence of a second computer in Ms. Motherboard's otherwise genteel home gave rise to (gasp!) arguments over who got to use the computer with the hard disk. So Ms. Motherboard cannot recommend this rather expensive solution unless a) the couple can afford a second computer, and b) the second computer is exactly the same as the first, since one or the other of the spouses (or other family members) will feel put upon by having to use the less desirable second computer, or c) the two computers share a hard disk.

Ms. Motherboard would prefer not to discuss money, but she realizes that not everyone is fortunate enough to have a large trust fund. Therefore Ms. Motherboard suggests that the family member whose work on the computer is either income producing or is necessary for their job should get first dibs on computer time. If both or neither are doing income producing work, then Ms. Motherboard recommends that the couple consider the age old practice of "taking turns." This involves setting a time span or scheduling alternate evenings or days. Thus the couple might agree that one will have the computer for two hours, then stop (yes, even in the middle of writing a program!) and allow the other to use the computer for two hours. Or the couple (or family members) might agree that the computer will be used by each spouse on alternate evenings. Ms. Motherboard cannot digress further on this matter, however, at the moment. Her time has elapsed, and will not start again until 2 AM.

Dear Ms. Motherboard,

Please help me, I'm desperate. My husband has been away on business for the past week. I thought it would be a good time to learn how to use our Rainbow better. I bought a box of disks to use with WordPerfect, and learned how to format them. Well, I thought I learned. While I was trying to format a disk, I accidentally formatted the hard disk instead. I thought the A drive was the floppy drive, but it must be the hard disk, because I don't have anything left on it. Mike will absolutely kill me! Is there anything I can do? Will Digital's hotline send someone out to help me at least get his programs back on the disk? I know he backed up the disk a few months ago, but I'm so afraid I've lost his important work.

What can I say to Mike when he returns?

Yours in desperation,
P.D.Q. Karen

Dear PDQ,

Ms. Motherboard is certainly glad she isn't wearing your silk stockings. Is reformatting a hard disk grounds for murder? Is it justifiable homicide? Ms. Motherboard certainly hopes not. Ms. Motherboard abhors violence. To avoid it, she suggests the following course of action:

1. Call the hotline or someone knowledgeable about computers to make sure that you really did reformat the hard disk, and are not just in a panic. It could happen.

2. If you did, indeed, lose everything (surely it was only the MS-DOS side), check every disk in the house to find your husband's last hard disk backup. (It isn't very old, is it? We all backup our hard disks at least once a week, don't we, if we are doing work that shouldn't be lost? Or once a day?) If he is organized, he may have not only backed it up, but marked the disks, as well.

3. If you find the disks, by all means call the hotline. They might not send someone out, but they would probably be willing to tell you, step by step, how to properly format the hard disk and load the backup disks. If the back up is not very old, call your husband and tell him what has happened. Perhaps his temper will cool before you see him again.

4. If you discover that the backups are either old or (horrors) non-existant, and your husband's work is irrecoverably lost, write him a letter or send him a telegram (he probably won't expect good news in a telegram anyway). No point in inviting his wrath in person immediately. Ms. Motherboard always suggests time and distance as an antidote to (possibly) murderous anger. In the telegram, tell him what has happened, what you have done to mitigate it, and offer to type in as much as possible of the lost work. Depending upon the nature of his work, he may have printouts, notes, and other things which will help rebuild the lost files. Generally it is fairly simple to reload the programs since there are almost always source disks for those.

5. In either case, to be fair, he must share the blame with you. Not backing up a hard disk is just as fool hardy as using FORMAT or any other command when you are not certain what it does.

Ms. Motherboard wishes you the best of luck in resolving what is surely an impossible situation. . .and suggests that all her dear readers make an Immediate Resolution to back up their hard disks, and yes, their floppies, too as often as necessary to keep from losing too much work. Backups, particularly of source disks, should be kept at another site. (One reader keeps them in a safety deposit box.)

Dear Ms. Motherboard,

I am an interior decorator and my wife is a writer. She has decided to buy a Digital computer to do her word processing. I don't know a thing about computers, but I think she made a wise choice aesthetically and ergonomically.

My problem is this: she insists on a green screen, claiming it will be easier on her eyes when she has to stay up late to meet deadlines. I shudder at the thought of a green screen. I just completed redecorating our study in Christian Dior grey and white. I insist on the white on grey monitor to blend with the decor and ambiance; the green would lend such a garish note to an otherwise perfect room. My wife thinks I am being unreasonable.

--Color Conscious

Dear Conscious,

De gustibus non est disputantum. Ms. Motherboard cannot bear to be seen with anything other than an amber monitor. However, in the interests of marital and esthetic harmony, she believes that compromise is in order. Since your wife will be using the computer, she should pick the monitor which she finds least stressful to her eyes. (Ergonomic experts claim that Ms. Motherboard's choice, tasteful amber, causes the least visual discomfort).

If your wife prefers the green monitor, you have several choices, which Ms. Motherboard will enumerate: (1) Since the room's color scheme would be spoiled by the green on black, never turn on the monitor. (2) Drape camouflage over the computer and your wife, and claim that the lump is a living work of art by a new, wonderful, unknown sculptor whom you have discovered. (3) Go to another, more esthetically pleasing room while your wife does her writing. (4) Hide the computer inside or behind a large desk or screen. (5) Incorporate bright green accents in the room's decor.

Ms. Motherboard suggests 3, 4 or 5.

Dear Ms. Motherboard,

Here's a tip for computer weary widows or widowers. My husband works on his Rainbow all night long. He's addicted to it!

Unfortunately, the computer is in our bedroom. I never used to get any sleep, what with all the clicks, buzzes, and whirrs. He discovered that he could turn off the key click and bell so it wouldn't keep waking me up. Now we don't have to move to a two bedroom apartment.

--Rested But Still Frustrated

Dear Frustrated,

How kind of you to pass on the information. Ms. Motherboard feels it is her duty to mention that you are indeed fortunate that your husband did not buy an IBM PC. The clack of the PC keyboard is so loud, you'd never have gotten any sleep. That dreadful IBM click can NEVER be turned off.

Feeling a parity error? Questions related to computer etiquette should be sent to Ms. Motherboard care of the Newsletter Editor. Ideally, letters should be sent on buff micro-perf bond with matching envelopes; however Ms. Motherboard has assured the Editor that she will read all missives.

(c) 1984, 1985 by Caroline M. Mack

THE GRAPEVINE

. . .Borland may put out a Modula-2 compiler soon. . . .Mark William's C in a Rainbow MS-DOS version should be out by the end of June ( ). . . .Used printers are typically discounted as much as 60% over the original cost. . .if you can find a used HP Laserjet, it could be as low as . . . .R Base: 5000 will not be available in a Rainbow version unless DEC comes to them and specifically requests it, according to MicroRim. . . .dBase III for the Rainbow--it IS available--mentions that you need MS-DOS version 2.11 to run it. . .fortunately, not true. . .it runs fine on MS-DOS 2.05. . . .Think twice before starting to change config.sys, especially if you have any files on the system already. . .you may get some very strange errors. . . .If you were planning to switch your 100A motherboard for a 100B, you may have to forget it. . .apparently DEC has released an internal memo banning the changes. . . .Minitel (public domain communications program, AKA Decmini) v. 3.02 doesn't work . . .stick with 3.0, which still works fine. . .Turbo-Pascal version 3.01A is being sent out. . .it apparently corrects problems in version 3.0. . . .Framework will not be available for the Rainbow. . .nor will ThinkTank. . . .Is DEC contemplating a lap top Rainbow to be made at a plant in Colorado? . . .at least one Rainbow user is beta-testing a version of Borland's Sidekick for the Rainbow. . .DEC is threatening employees so they won't talk about a new computer expected to be announced before Christmas 1985. . .the new personal computer will not be compatible with the Rainbow. . . .

(c) 1985 by Caroline M. Mack

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SHORT NOTES

--Barry Folsom, manager of DEC's Rainbow group, has resigned. He has taken a position as vice-president of East Coast engineering with Sun Microsystems, of Mountain View, California. Folsom headed the product team which developed the Rainbow 100, 100+, 190, and the VT180. Folsom's resignation closely follows the resignation of Neil Rich, Manager of Tactical Marketing for the Rainbow. Rich left that post in January to take another position within DEC.

--Lotus is offering Lotus magazine free to Lotus users for the first six months. They sent out a mailing to registered Lotus owners. If you are interested, contact Lotus Magazine, Subscription Department, Neptune, NJ 07755. The first issue, in May, was pretty impressive.

--PECUS, the Personal Engineering Computer User's Society, publishes a monthly newsletter Personal Engineering and Instrumentation News. The Personal Engineering Products Directory lists over 300 companies which sell software, hardware enhancements, and productivity aids for engineers and scientists. The Directory is $. Membership in the society, which is $ a year, reduces the cost of the Directory to $. For more information, contact Personal Engineering Communications, P. O. Box 983, Back Bay Annex, Boston, MA 02117.

--The 1985 edition of the DEC Add-Ons and Upgrades catalogue is offering the 5 meg hard disk (RCD50-BB/LZ) for the Rainbow 100 at the reduced price of $, approximately half of what it cost last year. The price of the 10 meg hard disk has not dropped. For comparison, the cost of a dual floppy unit is $. For more information or a copy of the catalog, contact Digital Equipment Corporation, Continental Boulevard, MK01/W83, Merrimack, NH 03054, (800)343-4040.

--Both Kodak and Polaroid have jumped into the floppy disk market. Polaroid is offering a disk recovery service; claims that most

disks can be saved, but that data which has been corrupted magnetically cannot be reconstructed.

--Closing the Gap is a newsletter which provides information about microcomputer technology as well as sources of information, products, and services for special education and handicapped persons. Bimonthly. It is available for $ a year from Closing the Gap, P. O. Box 68, Henderson, MN 56044, (612) 248-3294.

--WordPerfect Note: to change letters to either lower or upper case, turn on "range," ["block" in 4.0] and then press "extended features" ["switch" in 4.0].

--MicroSoft 800 number: (800) 426-9400

--With WordStar and a dot-matrix printer, you may be able to embed commands which allow you to print out scientific text, using the mail merge feature and the four user functions (PF 1-4). Details on how to achieve this can be found in "SCISTAR: Greek and Math Symbols with WordStar," p. 26-29 in the August 1984 issue of Dr. Dobb's Journal.

--Word-to-Word is a utility which allows documents written using WordStar, CT*OS, or the DECmate II to be translated so that documents written on any one of the three can be edited on either of the other two. Word-to-Word is available for the Rainbow, DECmate II, Pro 350, or VAX with VT100 and 200 series terminals. The Pro 350 version costs $. Maintenance contracts are available. Available from Aquidneck Data Corp., P. O. Box 639, Newport, RI 02840, (401) 847-7260.

--Touchscreen kits for the DEC Rainbow, Pro 350, and VT series terminals are available from Microtouch Systems, Inc. The kits enable the equipment to have a 1024 x 1024 pixel touch-sensitive screen which allows users to select from menus, create and manipulate graphics, and move the cursor. The touch screen controller is programmable. $ from Microtouch Systems, Inc., 400 West Cummings Park, Woburn, MA 01801.

--Brother, makers of the popular HR-15 low cost daisy wheel printer, have introduced the Twinwriter 5, a printer which has dual side-side dot matrix and daisy-wheel printheads. The 96 character daisywheel produces letter quality print at up to 36 cps. It can be switched either by hardware or software to a 9-pin dot matrix head which can print up to 140 characters per second. The printer allows insertion of graphics within letter quality text. It is bi-directional, and supports boldface, underline, super and subscripting, and proportional spacing. There is an 11K buffer. It lists at $. Information is available from Brother International Corp., 8 Corporate Place, Piscataway, NJ 08854, (201) 981-0300.

--VDT's and pregnancy, the latest word: The American College of Obstetricians and Gynecologists says that pregnant women who work at video display terminals can continue as long as they are physically comfortable. Based on studies conducted by the US Army Environmental Hygiene Agency and the Center for Disease Control, ACOG concluded that radiation levels were low enough that they would not cause birth defects or spontaneous abortion.

--The AFL-CIO is campaigning to add computer home workers to the list of industries in which home employment is banned by the Fair Labor Standards Act. The union claims claims that telecommuting workers should be protected from exploitation by supervisors who might pay them by output rather than time. Rob Cuccia, of the U. S. Department of Labor, stated recently that no regulations regarding computer home workers have been proposed during the Reagan Administration. Eighteen states have laws restricting work at home. Restrictive zoning laws may also cause problems for telecommuters.

--The December, 1984 issue of the magazine, Data Based Advisor offers an article, "DEC Rainbow 100 Interface: Taking Advantage of Powerful Video Capabilities." The articles discusses the video display and line drawing capabilities of the Rainbow. It offers four different program listings which enable the DBase II user to take advantage of the Rainbow's video display in DBase applications.

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LETTER TO THE EDITOR

Dear Editor:

I was pleased to finally receive another issue of the PC-SIG Newsletter last week. After watching other DECUS MEMBERS receive VAX Newsletter after VAX Newsletter, I was beginning to feel like a poor cousin. I appreciated the variety of information you included, and the clear readable format.

I was particularly interested in Dennis Fitzgerald's note about Application Migration Executive 86 (AME-86). However, when I looked up Volum 32 of the DECUS Program Library to order this software, I came up with "Tarbell Basic Language Assembler, Part II." I then slope with someone at the DECUS Library who was unable to find anything in the abstract indicating that AME86 was actually on this volume. Could you clarify this issue?

When I spoke with DECUS, I was told that the PC Library Volumes were basically unsupported in any way. Which brings me to a recommendation--I think that the newsletter could provide a valuable service to PC-SIG members by printing a detailed listing and/or review of the myriad programs contained on the PC Volumes. I certainly don't have the time, expertise, or money to look at 50+ PC Volumes for applications which I might use. Yet if I hear of something usable, (like AME-86), I would certainly include it in my daily work. I recognize that you have space and time concerns, but would hope a "Library Review" could be included in each issue.

Sincerely,

Mark Leenhouts
Hope College, Holland, MI

Dear Mark,

As Celeste Markovich, the former editor, wrote to you, the Volume 32 that Dennis Fitzgerald spoke of in his article was actually Volume 32 of the Washington Area Rainbow User's Group Public Domain Library.

Shortly after I received your letter, I received a copy of the 1985/86 U. S. Chapter DECUS Program Library Software Extracts. The abstracts they published were sufficiently explanatory. However, I was dismayed to find that there were only three volumes (one MS-DOS, two CP/M) which were actually written for the Rainbow! All of the others are older CP/M programs which may or may not run on the Rainbow.

You will have better luck, and find the software is cheaper, from local user groups. Nearly all of the groups listed below have public domain libraries. Explanatory listings may not be as thorough as those in the DECUS Library, but the programs will cost less. (Some libraries charge a nominal fee, others will let you send your own formatted disks with return postage.) Another way to get software is to download it from bulletin boards (also listed at the end of the newsletter.)

I like your suggestion for a "Library Review" column for Public Domain software. However, I must defer to other readers for the contents! Readers are invited to write programs up and send the write-up to me at the address above.

Caroline Mack
Editor

USER GROUP COLUMN

I will try to update this column in each issue. If you know of a DEC PC user's group that is not listed, please send me the name, address, telephone number and a contact person. Also, please let me know of any changes in the information here. Thanks. --ED

CALIFORNIA

INLAND EMPIRE PC LUG

For information, contact:
Chairman:
Jan Snyder
General Dynamics
380 Veronica Street
Upland, CT 91786
(714) 620-7511, x 1118/1101

SACRAMENTO VALLEY LUG
RAINBOW SIG

For information, contact:
Chairman:
Robert Walraven
1309 Notre Dame Drive
Davis, CA 95616

SAN DIEGO AREA RAINBOW LOCAL USER'S GROUP

Contact:
Chairman:
Rick Eliopoulos
5258 Vickie Drive
San Diego, CA 92109
(619) 225-7867
(619) 488-2116/5258

SAN FRANCISCO BAY AREA DEC PC USER GROUP
P. O. Box 12561
Northgate Station
San Rafael, CA 94913-2561

For information, contact:
Chairman:
Dale W. Miller
(415) 472-6531

SANTA BARBARA AREA DEC PC LUG

For information, contact:
Chairman:
Rick Vincent
253 Aspen Way
Santa Barbara, CA 93111
(805) 964-9744

SILICON VALLEY DEC PC USER'S GROUP

For information, contact:
Chairman:
Seth Goldberg
Stanford University
P. O. Box 4349
Stanford, CA 94305-4349
(415) 854-3300, x 2874

SOUTHERN CALIFORNIA PC LUG

For information, contact:
Chairman:
Bill C. Davis
GoodGames
1457 1/2 West 219th Street
Torrance, CA 90501
(213) 618-1083

CONNECTICUT

HARTFORD RAINBOW USER'S GROUP
P. O. Box 10387
West Hartford, CT 06110

For information, contact:
Chairman:
Reginald Dionne
(203) 725-6000, x 5248
(203) 583-4816

NEW HAVEN RAINBOW LUG

For information, contact:
Chairman:
William B. Leng
Southern Connecticut State Univ.
501 Crescent Street
New Haven, CT 06515
(203) 397-4625

NECRUG (Northeastern Connecticut Rainbow User's Group)

For information, contact:
Chairman:
Howard Roberts
67 Route 6
Andover, CT 06232
(203) 486-3920 (days)

DISTRICT OF COLUMBIA, MARYLAND AND NORTHERN VIRGINIA

WASHINGTON AREA RAINBOW USER'S GROUP

Chairman:
Ken Gordon
8600 Burning Tree Road
Bethesda, MD 20817
(301) 469-9240

For information, contact:
Newsletter Editor:
Caroline M. Mack
6415 Adelphi Road
University Park, MD 20782
(301) 927-0108

WASHINGTON AREA PRO USER'S GROUP

For information, contact:
Sharon Weiss
255 Congressional Lane
Rockville, MD 20852
(703) 692-1380

FLORIDA

TRI-COUNTY RAINBOW LUG

For more information, contact:
Bill Tabor
Computer Products, Inc.
2900 Gateway Drive
Pompano Beach, FL 33069
(3050 974-5500, x7258

HAWAII

HAWAII RAINBOW USER'S GROUP

For information, contact:
Professor Russell Yost
U. of Hawaii
Tropical Agriculture Department
3190 Maile Way
(St. John's 017)
Honolulu, HI 96822

ILLINOIS

CHICAGOLAND AREA PC/WPS LUG

For information, contact:
Cheryl A. Celeste
Monsanto
9701 West Higgins Road
Suite 500
Rosemont, IL 60018
(312) 823-9050

MASSACHUSETTS

Boston Computer Society
DEC PERSONAL COMPUTER USER'S GROUP

For information, contact:
Boston Computer Society
One Center Plaza
Boston, MA 02108
BCS (617) 367-8080
Chairman:
Karl Rosenberger
15 Willowbrook Drive
Framingham, MA 01701
(617) 879-8307

MISSOURI

ST. LOUIS PC LUG

For information, contact:
Ken Kaplan
Data Research Associates
9270 Olive Boulevard
St. Louis, MO 63132-3276
(314) 432-1100

NEBRASKA

OMAHA RAINBOW USER'S GROUP

For information contact:
Shirley Bohaty
1343 Bel Aire Blvd.
Wahoo, NE 68066
(402) 443-4766

NEW HAMPSHIRE

SEACOAST PC LUG

For information, contact:
Kevin Sperl
ACS, Inc.
P. O. Box 76
Center Strafford, NH 03815
(603) 664-9717

NEW MEXICO

ALBUQUERQUE DEC PC LUG

For information, contact:
Chairman:
Stan Dutler
7204 Oralee NE
Albuquerque, NM 87109

NEW YORK

LONG ISLAND LUG
(PC SIG?)

For information, contact:
Chairman:
Al (Fred) Scholldorf
Reuters, Ltd.
90 Davids Road
Hauppauge, NY 11788
(516) 435-7116

NEW YORK METRO DEC PC LUG

For information, contact:
Co-Chairman:
Bob Bennett
DEC User's Group of Greater New York
697 West End Avenue, #9B
New York, NY 10025

GREATER ROCHESTER AREA LUG
PC Forum

For information, contact:
Gary Griswold
B&G Associates
P. O. Box 31
Webster, NY 14580
(w) (716) 722-1723
(o) (716) 477-5664

NORTH CAROLINA

RESEARCH TRIANGLE LUG
PC Special Interest Group

For information, contact:
Jack Brickley
P. O. Box 2713
Chapel Hill, NC 27515
(919) 929-7791

OHIO

CENTRAL OHIO PC LUG

For information, contact:
Chairman:
Dana Klebes
Battelle Memorial Institute
505 King Avenue
Columbus, OH 43201
(614) 424-4947

For information, also contact:
Robert L. Lindsay
Lancaster City Schools
345 East Mulberry Street
Lancaster, OH 43130

the Central Ohio LUG is also trying to start a PC SIG.

PENNSYLVANIA

DELAWARE VALLEY DEC-PC USER GROUP

For information, contact:
Chairman:
Roland Spressart
RSPE Engineers
89 Signal Hill Road
Holland, PA 18966
(215) 968-3494

Newsletter Editor:
Tom Deahl
MICRODOC
815 Carpenter Lane
Philadelphia, PA 19919
(215) 848-4545

ST. JOSEPH'S UNIVERSITY RAINBOW USER'S GROUP

For information, contact:
Chairman
Dr. Val Herzfeld
5600 City Avenue
Philadelphia, PA 19131
(215) 899-7665

UNIVERSITY OF PENNSYLVANIA DEC RAINBOW USER'S GROUP

For information, contact:
Bill Gavelis
906 South 46th Street
Philadelphia, PA 19143

TENNESSEE

MIDDLE TENNESSEE DEC PC LUG

For information, contact:
Chairman:
Dennis D. Knowles
Cumberland Associates
108 Brookhollow Drive
Old Hickory, TN 37138
(615) 754-9151

TEXAS

DALLAS RAINBOW USER'S GROUP

For information, contact:
Chairman:
Ken Kattner
Kadex Corporation
11311 North Central Expressway
Suite 300
Dallas, TX 75243
(214) 692-6080

HOUSTON DEC PC LUG

For information, contact:
Chairman:
Allen Bartram
Houston Micros
12502 Millbanks
Houston, TX 77031
(713) 495-3168

or
9119 South Gressner
Suite 101
Houston, TX 77074
(713) 981-5107

UTAH

SALT LAKE'S RAINBOW USER'S GROUP
(a SIG of the Salt Lake LUG)

For information, contact:
J. R. Westmoreland
6748 Acoma Road
Midvale, UT 84047
(801) 262-5251

VIRGINIA

RICHMOND USERS GROUP

For information, contact:
Gilpin Brown
Academic Computing
University of Richmond
Richmond, VA 23173
(804) 285-6494

WISCONSIN

NORTHEAST WISCONSIN LUG
(PC SIG?)

For information, contact:
Steve Peschke
Network System Design
300 North Main Street
3rd Floor
Oshkosh, WI 54901

GERMANY

GERMAN PC SIG

For more information, contact
Dr. Otto Titze
Institut fur Kernphysik THD
TH Darmstadt
Schlossgartenstrasse 9
6100 Darmstadt
Germany
(Telephone) (0 6151) 16 33 23

EUROPE

EUROPEAN PC SIG

For more information, contact:
Paul Sawyer
School of Chemical Engineering
University of Bath
Bath, Avon, BA27AY
England

OTHER

COMPUSERVE

The VAXSIG has an active group of DEC PC users. Compuserve subscribers can type GO PCS-16 at the ! prompt and select sub-area 6. A real time conference is held every Wednesday at 9:30 PM EST. Also has a bulletin board and software area.

ROG--ROBIN OWNER'S GROUP

For information, contact:
Chairman:
John Comella
2 Mockingbird Lane
Maynard, MA 01754

AMERICAN BAR ASSOCIATION DEC USER GROUP
Lawrence Eisenberg
(818) 788-0354

Kelly Frey
Harwell Barr Martin and Stegall
P. O. Box 2960
Nashville, TN 37219-0960

David Sykes
Duane, Morris and Heckcher
One Franklin Plaza
Philadelphia, PA 19102
ABA CONFER #170

NATIONAL DECUS ADDRESS

DECUS (Digital Equipment User's Society)
Ann Foley
249 Northboro Road (BP02)
Marlboro, MA 01752
(617) 480-3259

DEC RAINBOW ORIENTED BULLETIN BOARDS

Bulletin Boards are believed to be open 24 hours unless noted. All accept 300 and 1200 baud rates. This list of DEC-oriented bulletin boards may not be complete.

(201) 750-3748 DEC-WARE II Iselin, NJ. David Horowitz
(203) 453-1089 Rainbow's End Guilford, CT. Matt Gertner (7 pm -6 am)
(206) 757-5233 PTC NET Mt. Vernon, Washington.
(212) 535-8924 DEC-WARE I Forgot. . . New York, NY.
(213) 204-2996 Rainbow Data Los Angeles, CA. Don Brauns
(213) 436-4324 Long Beach Micro Long Beach, CA. (after business hours)
(214) 991-7934 DalTex FIDONet Dallas, TX
(301) 484-2831 CLP-BBS Pikesville, MD. John Madill
(301) 776-2300 The Beauty Board Laurel, MD John Raum
(305) 677-8332 Joe's Rainbow Orlando, FL. Joe Clayton
(312) 759-5402 Illini Data Bolingbrook, IL. Rob Elliot
(314) 432-4129 DECUS Central St. Louis, MO. Sysops 16, 17, and 22
(314) 726-3448 Mikes-Board St. Louis, MO. Mike Mellinger
(314) 576-2743 PC LUG St. Louis, MO. Ken Kaplan
(314) 234-1462 MDC RCC St. Louis, MO. Ben Baker (5 pm - 8 am)
(314) 962-0395 DCA BBS St Louis, MO. Jon Wichman
(408) 923-5565 Vern's FIDO San Jose, CA. Vern Crawford
(415) 864-1418 Fido's-Board San Francisco, CA. Tom Jennings
(415) 431-8088 Puppy's Board San Francisco, CA Tom Jennings
(602) 952-2146 Rainbow BBS Phoenix, AZ. Jim Kashner (12 am - 4 pm, 10 pm - 12 am, M-F; 12 am - 8 am, Weekends)
(609) 429-6630 DEC-House Cherry Hill, NJ. Brian Sietz (12 a.m.-5:30 p.m.)
(617) 481-7147 WayStar Marlboro, MA. Kevin Porter (run by a DEC employee)
(617) 783-7528 Midnight DEC Allston, MA. David Strickler (12 a.m. to 5 p.m.--may not be in operation)
(617) 721-1688 DEC-Line Boston, MA. Bill McNeil
(617) 632-1861 Dave's FIDO Gardner, MA. David Rene
(617) 874-4325 Dave's Annex Westminster, MA David Rene
(617) 646-3610 NECS Arlington, MA. Dave Mitton
(617) 486-2285 RBG-ENG HootNet Littleton, MA Bob Gibson (Run by the Rainbow Engineering Group at DEC)
(619) 488-2116 San Diego Rainbow LUG San Diego, CA. Rick Eliopoulos (7 am - 7 pm)
(703) 671-0598 The Bear's Den Falls Church, VA. Kurt Reisler (7 a.m.-11 p.m.)
(703) 359-6179 Wash-A-RUG Fairfax, VA. Washington Area Rainbow User's Group
(713) 870-8033 Artichoke Houston, TX.
(714) 537-7355 Mike's Rainbow Garden Grove, CA Mike Hamilton
(717) 794-5268 Catt House Fido Blue Ridge Summit, PA. Bob Catt
(806) 795-0102 DEC Domain Lubbock, TX. Alan Minchew
011-46-541-33170 Day Rainbow Karlstad, Sweden. Conny Jonsson (300 baud)
011-44-635-4680 Ron Smallwood England. Ron Smallwood

(non-Fido bulletin boards)

(201) 249-0691 CP/M-Net (tm) East Piscataway, NJ
(505) 831-0205 ROBIN RBBS Albuquerque, NM Elroy Gonzales
(617) 467-4824 PDL (Scientific Applications Public Domain Software; to log onto system respond to prompt for "Username' and 'Password' with 'PDL'

APPENDIX

HAS THE RAINBOW BEEN DROPPED? ONLY DEC KNOWS FOR SURE

Since this newsletter is scheduled to appear in June, this is definitely "old news." But for those who haven't seen this elsewhere, here is the text of the Press Conference which DEC arranged to reassure us that the Rainbow hasn't been dropped, along with other comments and related articles.

DEC RAINBOW TO FORM SIGNIFICANT LINK IN DEC OFFICE AUTOMATION STRATEGY

At a press conference called by Ken Olsen, president of Digital Equipment Corporation, Henry Ancona, Group Manager of the Office and Information Systems division discussed DEC's plans for office automation, and where the Rainbow fits within DEC's office automation strategy. Here is the complete text of Henry Ancona's March 4 Press Announcement at the Merrimac (New Hampshire) DEC facility.

"Today we are delivering the third in a series of announcements we promised in December. We said that Digital would clearly, repeatedly, and without a doubt, set new standards in integrated office systems. We continued to fulfill this commitment at OAC in February. And today we are gathered by the pine trees and ponds to discuss two things with you:

o First, Digital's vision of how personal computing fits into the company's office workstation strategy and, second

o Significant new products and product enhancements, particularly for the Rainbow, that are based on that strategy, and that strengthen our leadership role in the office.

Digital's Office Workstation strategy is the outgrowth of extensive market research, as well as constant discussions with current and prospective customers. Very simply, it is Digital's response to defined needs, from actual and potential real-life users, in all sizes and kinds of offices.

And what did our research tell us? Two points worth remembering:

First, stand-alone personal computing in the office is a thing of the past. At times, individuals may work alone, but individuals are members of teams, too. They need to access, use, and share information with other members of their team, their department, and their company. Each individual's workstation or personal computer must be vitally linked with Departmental and corporate computers, to facilitate sharing information between teams and departments, and accessing necessary data.

Second, there is no such thing as a Universal Workstation. Users want the right workstation, for the right job, at the right price, to help them do their jobs better.

Let's briefly review user needs in the office and, how Digital has addressed each user's needs, supplying the right solution for the right job at the right price.

First let me tell you what the casual user wants. He or she needs the resources of a computer only a few times a day: to look up summary information. . .to read and respond to electronic mail once or twice a day. In fact, our research shows that a large percentage of non-automated office workers fall into this category. For the casual user, at about $1,000, Digital offers the VT200 terminal family, which can access the broad range of functionality to our VAX-based integrated office system, All-in-1.

For those not familiar with All-in-1, it is the best integrated office system on the market. It has a unique combination of VAX power, sophisticated communications, and office functionality. It offers word processing, electronic mail, and voice capability, among its features. It leads the competition in functionality.

Next, lets look at the text intensive user, a professional whose job consists of a lot of writing, a secretary or support person. This person needs more than the casual user; in addition to information retrieval and electronic mail, refined text processing at the individual's desk is a necessity.

For the text intensive user we have the DECmate. For about $, the DECmate III Office Workstation offers both Digital WPS word processing at the individual's desk as well as consistent menus and tight integration with All-in-1.

Now we have the popular personal computing software user, whose needs are the same word processing, and more. This person also wants easy-to-use spreadsheets, graphics, and other widely available software--the traditional "personal computer" applications such as Lotus 1-2-3. He or she wants ease of use and control of information in a highly local, personal environment. And at the same time, the ability to integrate information from departmental or corporate computers with this personal computer software.

For the popular personal computing software user, we offer the Rainbow. At about $, our new Rainbow 190 Office Workstation gives the user the convenience of traditional personal computer software at the individual's desk, as well as WPS word processing, consistent menus and tight integration with All-in-1.

Next is the custom application software user. His or her needs are more sophisticated, more specialized. This user may be a technical manager who needs to plot complex project development, or dip into technical files. . .the manufacturing manager who must do MRP and inventory control. . .the senior financial person who needs more than a simple spreadsheet. This individual needs the power of the minicomputer on the desk.

For this user, Digital offers the Professional. At approximately $, the PRO 380 Office Workstation gives the user a powerful minicomputer at the individual's desk, as well as consistent menus tight integration with All-in-1.

At the top of the power scale is the engineering graphics user. This person--whether a design engineer or design project manager--not only needs to tie into an office system with electronic mail, word processing, and data retrieval. He or she also needs special software, functional capability, and graphics, for such application as CAD/CAM. . .the power of a superminicomputer on the desk.

At approximately $, we have our VAXStation family, with local engineering management and design capabilities including CAD/CAM, and connection to All-in-1.

The right workstation for the right job at the right price, so each user can do his or her job better. . .all tightly integrated to All-in-1 on the VAX and other vendors' computer systems, so individuals share information with other members of their team, department, or entire corporation, anywhere in the world.

But now, let's focus on today's product announcements, starting with out exciting new Rainbow system.

I am pleased to announce a new Rainbow system, that has been optimized for use in the office--the Rainbow 190. The Rainbow 190 has been specially packaged for user who need the capabilities of a top of the line personal computer tightly integrated with a departmental office system. Available in July in an easy to order package, the Rainbow 190 is priced at $, and includes the Rainbow Office Workstation software, full WPS word processing, a 10 megabyte disk, and the appropriate hardware and memory. Prices are as low as $ each in quantities of 100.

The new Rainbow Office Workstation software, available separately for current Rainbow users, increases the benefits of desktop computing by tightly integrating Rainbow personal computing software with VAX-based All-in-1. This includes the ability to downline load information from the VAX directly into a program for local processing on the Rainbow. It features consistent menus with All-in-1, the local creation of mail messages, and automatic mail pickup and delivery. The Rainbow Office Workstation software will be available in June for $.

At the same time, we are announcing Rainbow WPS, which brings Digital's WPS word processing--with all its feature-rich function-

ality and consistency--to the Rainbow family. Priced at $595 when purchased separately, WPS on the Rainbow will be available in June.

For those Rainbow users who require the highly sophisticated level of interaction offered by DECNET, we have our next announcement. Rainbow with DECNET gives the Rainbow better and easier access to any computer on a DECNET network. It allows users to send and receive files from any system on the network, anywhere in the world. Priced at $, Rainbow with DECNET will be available in September.

Today's announcements, we are confident, further strengthen the Rainbow family.

Now on the the DECmate Office Workstation, which merges the benefits of full-function word processing at the desktop, with All-in-1 on the departmental or corporate VAX system. The new version we are announcing today offers increased ease of use through menus consistent with All-in-1, local creation of electronic mail messages, and automatic mail pick-up and delivery. Version 2 of the DECmate Office Workstation will be available in July for $.

Today, we are also announcing a version of the Pro Office Workstation. The PRO Office Workstation takes advantage of the PRO's multi-tasking capabilities, and offers automatic mail pick-up and delivery. Enhancements include menus consistent with All-in-1, full DECNET support, additional features, and automatic file back-up to the VAX. The new version of the PRO Office Workstation will be available in April for . And, today, we are announcing our intention to make WPS word processing available at the desktop level on the Professional.

With these announcements Digital continues to set new standards for integrated Office Systems. No one else can do what Digital can.

Not a single universal workstation forced on everyone. . . but a universal user interface, consistent with All-in-1, no matter what workstation sits on the desk. Whether you are used to working on a VT200, a DECmate, a Rainbow, or a PRO, you can be in any office, at any workstation, anywhere in your company and know how to access your electronic mail. It will be instantly familiar because the keystrokes, commands, and menus are familiar. It will be instantly available because every workstation can be connected through the Digital network.

The same consistency applies to our WPS word processing. From any workstation--no matter which one you use--you will see familiar keystrokes, commands, and menus. You will be instantly able to write, edit, transfer, print and electronically mail documents.

The beauty of Digital's Workstation strategy extends beyond the right power, at the right price, at the desktop. It includes the right combination of desktop capability and tight integration with departmental and corporate computers.

All users need to be able to connect to departmental and corporate computers for sending and receiving electronic mail and to look up information.

Most users want to create and edit electronic mail, and do their word processing, right at their own desks, where they have direct control of their document files. Many users want full networking capabilities for easy access to their departmental and corporate computers, to extend the individual nature of traditional personal computing, to cooperative, team computing.

And the more sophisticated users need all these capabilities to take full advantage of distributed applications.

No other company can make it all work together like Digital can. No other company can offer users the convenience and cost effectiveness of this kind of computing. No one. . .not even IBM.

As you can readily understand, a single VAX architecture, comprehensive networking, the power of All-in-1, consistent word processing and consistent human interfaces, all tightly integrated together--from the desktop to the data center--make us unique."

DEC RUMORS FLY DURING FEBRUARY

Ancona's announcement came in the wake of rumors which flew during February after a New York times story stated that DEC was retooling the factory which produced the Rainbow line in order to make Micro-11's. An article in the Wall Street Journal a few days letter noted that DEC's stock had dropped four points after the Rainbow line was dropped.

Susan Walter and Nancy Settle of DEC stated that the rumor was not true. Both sent an internal memo dated Wednesday, February 13, 1985, with the following information:

The following statements will be released to the press in response to Monday's New York Times article regarding the Rainbow product:

We are NOT abandoning Personal Computers:

In the wake of recent speculation that it is abandoning the personal computer market and, in particular, its RAINBOW microcomputer, Digital Equipment Corporation signaled that it would announce, next month, significant enhancements to its RAINBOW and DECMATE personal computers which, according to Digital President, Ken Olsen, "will set new standards of versatility and functionality for personal computers". Olsen did not provide specific details on the announcement, but said that the planned enhancements and options would combine the best features of personal computing, word processing, and office automation. He said the new offerings would deliver important price/performance improvements in environments where interconnected personal computers are used as the user interface to larger systems.

Olsen stressed that the enhanced capabilities would also be available as upgrades to current RAINBOW/DECMATE users.

We are NOT planning to have a layoff:

We are improving manufacturing efficiencies through major new technologies like LSI, reduced overhead costs by simplifying our organization and structure, improved inventory management techniques and continued increases in the quality and reliability of our products.

"Our success in these areas has allowed us over three years to nearly double our sales without increasing our manufacturing population.

"Our competitiveness demands that we accelerate and expand on these programs to improve productivity. Therefore, over the next several years, we plan to be able to support increasing sales levels with a reduced manufacturing population."

In a telephone interview, Susan Walters, local Sales Unit Manager, stated that the article in the New York Times had "no credence. DEC is committed to the product." She stated the announcement in the New York times was not true, and that DEC believed that the announcement had occured because a disgruntled DEC employee at their Westfield manufacturing plant had sent an internal memo to the New York Times. She also suggested that the fall in DEC stock was not related the news that the Rainbow had been dropped, but was instead related to the fact that IBM had posted flat earnings for the previous quarter. She mentioned that a number of other computer stocks had fallen more than DEC.

Regarding DEC's response to the New York Times article of February 12, 1985 regarding the cessation of Rainbow production, the following was downloaded from a bulletin board:

"Audience: Worldwide
From: Jack Shields, V.P. Field Opera tions
Subj: Response to New York Times article

The New York Times published an article in their February 12, 1985 edition entitled "Product Abandoned by DIGITAL" and subtitled "Rainbow Plant being Refitted."

This article has been the basis for articles in various other publications addressing the same topic. The misleading impressions which the article gives require clarification which we are currently addressing with the press. However, to benefit you in discussions with our customers, the facts surrounding those issues are as follows:

Westfield facility: DIGITAL has been planning for some time to build up a large inventory of Rainbow computers so that it could shut down the production line and refit it for another computer product. By producing in volume to meet both our current sales and inventory requirements, we have been able to take advantage of manufacturing efficiencies so necessary to stay competitive. If our inventory is not sufficient to meet our projected needs, then manufacturing capability is available to provide systems as required.

Manufacturing in general: DIGITAL has publicly stated its ongoing goal to reduce its manufacturing costs. This involves a continuing effort to make more effective use of our facilities and people each time we refit a facility for new product manufacture. In fact, because of the number of new products soon to be announced, you may hear of more situations where plants are converted from current product manufacture to new products. Each conversion offers us the opportunity to make efficiencies in the manufacturing process.

PC strategy: We have stated publicly, and will continue to reinforce, the importance of personal computing to DIGITAL's overall corporate product strategy. We are making significant investments in Rainbow enhancements, which will be announced in the very near term, as well as a new personal computer-class system, which will be announced in the future. You can, with confidence, ensure your customers that DEC's current products, soon-to-be announced enhancements, and follow-on products will provide them the same competitive advantages that DIGITAL products have always provided.

In summary, what has been billed as "news" is inaccurate in assuming that we are moving out of the Rainbow PC business and misleading in representing our commitment to continued manufacturing efficiencies. Our Rainbow PC strategy and commitment to manufacturing efficiencies are both positive positions which, unfortunately, came out negatively."

WHAT ALL OF THIS MEANS TO HOME AND SMALL OFFICE RAINBOW USERS
by Caroline Mack

DEC is not "abandoning" the Rainbow-it is changing the number and the keyboard. There are purportedly over 100,000 Rainbows in stock at DEC. While this appears to be good news to Rainbow owners and users who have, for the most part, spent several thousand dollars for a Rainbow and Rainbowspecific software, it is not all that reassuring. DEC sees the Rainbow as an office automation tool, a glorified terminal, but does not regard it as a stand-alone personal computer. Too bad, home users.

DEC's marketing decisions have prevented the Rainbow, generally considered a superior personal computer, from gaining a decent market share. Insufficient advertising, unwillingness to make the Rainbow's architecture available to third-party manufacturers, and the failure to make any sort of concession to IBM-PC compatibility have drastically narrowed the market for the Rainbow. The decision last year to concentrate on vertical markets, and the disappearance of the Rainbow from major chains such as Computerland and Entre (whether DEC's decision or theirs), severely aggravated the problem. DEC sales strategies, which pitted DEC salespersons against the other stores, in some cases, did not help.

DEC is one of the few companies which had not only a superior personal computer, but sufficient financial staying power to give the IBM-PC and the myriad "compatibles" a run for the money. But the views of DEC's president, Ken Olsen, permeated Rainbow marketing. A recent quote underscores his disinterest in personal computers: "You can't measure us by our micros. That's not what we are. We manufacture large systems. That's what the world

needs. . .We have little to contribute in the field of personal computers. . . .micros are cheap, short-lived, and not very accurate."*

The spate of rumors has forced DEC to declare itself concering microcomputers. The Rainbow 190 does not represent a major advance in Rainbow technology. Home and small business users do not need a computer whose only use is in networking. Unless the customer base for the Rainbow is broadened, it seems unlikely that third party manufacturers will continue to view the Rainbow as a viable entity and convert programs to run on it, or make hardware for it.

I, for one, still feel abandoned.

[Editor's Note: As of the date of this publication, there have been a multitude of rumors about a new DEC PC, but no concrete information. The Rainbow 190 is being manufactured from equipment already in stock. At this time it appears that no new Rainbows are currently being manufactured.]

*Quoted in Computer Decisions, February 12, 1985; Hit or MIPS with VAX 8600," pp. 56-58.

PRO 300 SERIES WISH LIST BALLOT

Use this ballot to show which items on the Wish List are most important to you. Put the number of the most important item on the list in space 1, the next most in space 2, etc.

1___	11___	21___	31___	41___	51___	61___
2___	12___	22___	32___	42___	52___	62___
3___	13___	23___	33___	43___	53___	63___
4___	14___	24___	34___	44___	54___	64___
5___	15___	25___	35___	45___	55___	
6___	16___	26___	36___	46___	56___	
7___	17___	27___	37___	47___	57___	
8___	18___	28___	38___	48___	58___	
9___	19___	29___	39___	49___	59___	
10___	20___	30___	40___	50___	60___	

Please add the following to the wish list:

_____

_____

_____

_____

Comments:

RETURN BALLOTS TO:

Thomas R. Hintz
University of Florida
IFAS Computer Network
Building 810
Gainsville, FL 32611

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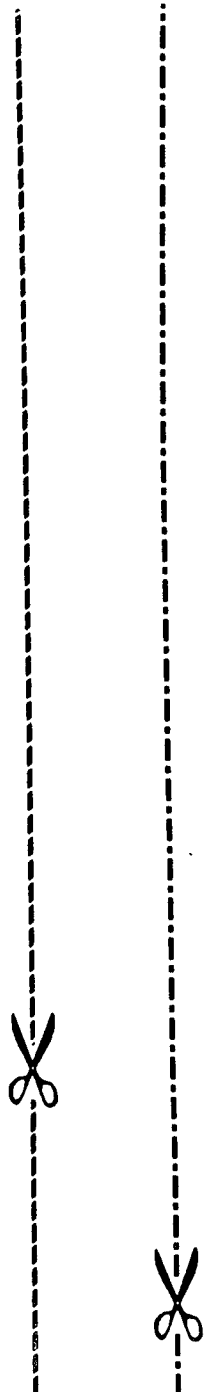

DECUS PERSONAL COMPUTER SIG QUESTIONNAIRE

General:
I would like information on _____.
I would like to see an article in the newsletter on _____.
I would like to see a symposium session on _____.

I attend DECUS Symposiums: ___always ___sometimes ___never
I use/own: ___Rainbow(s) ___PRO(s) ___DECmate(s)
I use the machine(s) checked above:
___at work ___at home ___both
If at work, total number of DEC PC's at your site: _____
I also use: ___VAX ___IBM or other mainframe ___IBM or other PC
Type of use: ___business ___educational ___government
___other _____
Primary Operating System: ___MS-DOS ___CP/M ___both equally
___other _____
I belong to a local DEC PC User Group: ___yes ___no
There is a user group in my geographic area: ___yes ___no
I would like information on starting a user group: ___yes
I use a modem: ___often ___reluctantly ___never
___for work ___for pleasure ___both
Here is a DEC PC User Group not on your list:
Name of Group_____
Name of Contact Person_____
Address_____
_____
Telephone (___)_____

Here is a DEC oriented bulletin board not on your list, or new information on a listed board:
Name of Board_____
Full name of Sysop_____
Address if known_____
City and State_____
Telephone Number_____
Other Info:_____

I am willing to write an article on:_____
_____

The subjects of most interest to me are:

___word processing	___project management
___spreadsheets	___specialized vertical software
___graphics	(type)_____
___communications	___Rainbow
___programming	___PRO
___software reviews	___DECMate
___technical articles	___Robin
___DEC Gossip and News	___Other:_____

If I had it to do over again, I:
___would buy another DEC Rainbow/PRO (circle one)
___might buy another Rainbow/PRO if it was a bargain (circle one)
___would not buy another Rainbow/PRO (circle one)

This newsletter is going to be folded into one large monthly publication (but will remain quarterly.) Will you continue to subscribe at the new price of $35/year? ___yes ___no
Feel free to enclose another page(s) with comments!

Name_____
Company_____
Address_____
City/ST/ZIP_____
Work Phone (___)_____
Home Phone (___)_____

Return to:
Caroline M. Mack
6415 Adelphi Road
University Park, MD
20782

Do you feel that leaving the prices out of the newsletter:

___is appropriate
___is very annoying
___makes the articles less useful

Do you feel that DECUS should revise its "commercialism" policy?

___yes
___no

fold here

stamp

Caroline M. Mack
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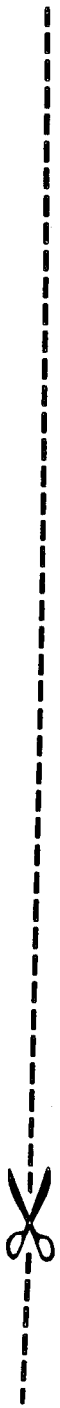
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